

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	BAMBERG, Ulf et al.	Examiner:	Shewareged, B.
Serial No.:	09/980,466	Art Unit:	1794
Atty Docket:	A030 P00619-US		
Filed:	June 1, 1999		
For:	INK-JET TRANSFER SYSTEM FOR DARK TEXTILE SUBSTRATES		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR INTERFERENCE UNDER 37 C.F.R. §41.202

Dear Sir:

Applicant respectfully requests that a patent interference be declared under 37 CFR §41.202 in connection with the above-captioned patent application.

Described below are an identification of interfering patent and patent applications, identification of interfering claims, proposed interference counts and a supporting claim chart, an explanation of priority, a claim chart showing where support for the claims may be found in specification of the present application, and a statement supporting constructive reduction to practice prior to the interfering patent and patent applications.

I. IDENTIFICATION OF INTERFERING PATENT AND PATENT APPLICATIONS

A. U.S. Patent No. 6,884,311 (hereinafter “Dalvey I”)

Dalvey I was filed on April 3, 2000, which is a continuation-in-part application of U.S. Patent Application No. 09/391,910 (now abandoned) filed on September 9, 1999. Dalvey I issued on April 26, 2005 with Claims 1-14. Applicant believes that Claims 1-14 in Dalvey I interfere with Applicant’s claimed subject matter in the present Application.

B. U.S. Reissue Patent Application Serial No. 12/218,260 (hereinafter “Dalvey I – Reissue”)

On July 11, 2008, Jodi Schwendiman, previously known as Jodi Dalvey, (co-inventor and assignee of Dalvey I) filed “Dalvey I – Reissue” for U.S. Patent No. 6,884,311 (Dalvey I). The reissue application was filed with a preliminary amendment to the Claims 1-14 of “Dalvey I-Reissue” and also an information disclosure statement containing additional prior art. A copy of the preliminary amendment is included in Exhibit 1 which contains the amendments to “Dalvey I-Reissue”. As of December 5, 2008 no substantive examination of Claims 1-14 in “Dalvey I – Reissue” has occurred. The Applicant believes that Claims 1-14 of the preliminary amendment for “Dalvey I – Reissue” also interfere with the Applicant’s claimed subject matter in the present Application as discussed herein. When the claims of “Dalvey I – Reissue” are finalized, the Applicant, if necessary, can further explain how the finalized claims of the reissue application interfere with Applicant’s claimed subject matter in the present Application.

C. U.S. Published Application No. 2005/0048230 A1 (hereinafter “Dalvey II”)

Additionally, Applicant has also learned of U.S. Patent Application No. 10/911,429 entitled “ Method of Image Transfer on a Colored Base”” which was co-invented by and assigned to Jodi A. Dalvey. Dalvey II was originally published with Claims 1-20 listed in the published application. Subsequently, Claims 1-16 and 18 were cancelled. On March 25, 2008, the Dalvey II application received a Notice of Allowance for Claims 17 and 19-39. On June 25, 2008, an improper Request for Continued Examination (“RCE”) was filed by Dalvey. According to the Notice of Improper Request for Continued Examination dated July 10, 2008, “the request was not accompanied by a submission as required by 37 CFR 1.17(e) as required by 37 CFR 1.114.” Since the application is not under appeal, the time period set forth in the final Office action or notice of allowance continues to run from the mailing date of that action or notice. Notwithstanding the improper RCE, Dalvey has continued prosecution after June 25, 2008 by filing subsequent amendments to the Claims on July 29, 2008, August 18, 2008 and November 24, 2008 (six months or more after the final Office Action dated February 18, 2008).

Regardless of the present status of Dalvey II, the Applicant believes that Claims 17, 19-26, 28-39, and 47-57 in Dalvey II, as disclosed in last amendment dated November 24, 2008, interfere with Applicant’s claimed subject matter in the present Application. A copy of the last amendment is included in Exhibit 2 which contains the amendments to Dalvey II as of November 24, 2008. In the event that Dalvey II has not been abandoned, the Applicant believes that the claims of Dalvey II as of November 24, 2008 interfere with Applicant’s claimed subject matter in the present Application.

D. U.S. Published Application No. 2008/0149263 A1 (hereinafter “Dalvey III”)

The Applicant has also learned of U.S. Patent Application No. 12/034,932 entitled “Method of Image Transfer On A Colored Base” which was co-invented by and assigned to Jodi A. Dalvey (now known as Jodi A. Schwendimann). Dalvey III was filed on February 21, 2008, as a continuation of application no. 10/911,249 (Dalvey II), filed on August 4, 2004, which was a division of U.S. Patent Application No. 09/541,845, filed on April 3, 2000, now U.S. Patent No. 6,884,311 (Dalvey I), which was a continuation-in-part of application no. 09/391,910, filed on September 9, 1999, now abandoned. On June 26, 2008, Dalvey III was published as U.S. Published Application No. 2008/0149263 A1 with Claims 1-7. On August 18, 2008, an amendment to Dalvey III was filed listing Claims 1-23 which is included in Exhibit 3. As of December 5, 2008 no substantive examination of Claims 1-23 in Dalvey III has occurred. The Applicant believes that Claims 1-11 and 14-23 in Dalvey III interfere with the Applicant’s claimed subject matter in the present Application.

- E. U.S. Patent Application Serial No. 12/193,562 (hereinafter “Dalvey IV”)
U.S. Patent Application Serial No. 12/193,573 (hereinafter “Dalvey V”)
U.S. Patent Application Serial No. 12/193,578 (hereinafter “Dalvey VI”)

Additionally, Applicant has also learned of U.S. Patent Application Serial Nos. 12/193,562 (“Dalvey IV”), 12/193,573 (“Dalvey V”), 12/193,578 (“Dalvey VI”) which were filed on August 18, 2008 by the Applicant. Dalvey IV, V, and VI all claim the benefit of Dalvey II and Dalvey III. Note, Dalvey II, for reasons stated above, may be abandoned. As of December 5, 2008, Dalvey IV, V, and VI have not been published or been issued so the actual contents of these filings is unknown. However, the Applicant believes that since Dalvey II and Dalvey III interfere with the Applicant’s claimed subject matter in the present Application, then it is more than likely that Dalvey IV, V, and VI may also contain claims that interfere. Upon

publication or issuance of Dalvey IV, V, and VI, the Applicant can review the subject matter and claims, and if necessary, further explain how the claims of Dalvey IV, V, and VI interfere with Applicant's claimed subject matter in the present Application. Note, Applicant will amend or add claims at the Examiner's suggestion to further support this request for a patent interference with Dalvey I-VI.

II. IDENTIFICATION OF INTERFERING CLAIMS

Applicant believes that Claims 1-14 in "Dalvey I-Reissue" interfere with Applicant's claimed subject matter in the present Application. In order to provoke an interference, new claims 45-58 of the present application have been added to correspond to Claims 1-14 in "Dalvey I-Reissue".

Applicant believes that Claims 17, 19-26, 28-39, and 47-57 of Dalvey II interfere with Applicant's claimed subject matter in the present Application. In order to provoke an interference with Dalvey II, new claims 59-90 of the present application have been added to correspond to Claims 17, 19-26, 28-39, and 47-57 in Dalvey II.

Applicant believes that pending Claims 1-11 and 14-23 in Dalvey III interfere with the Applicant's claimed subject matter in the present Application. In order to provoke an interference with Dalvey III, new claims 91-111 of the present application have been added to correspond to Claims 1-11 and 14-23 in Dalvey III.

Note, Applicant acknowledges that the claims of Dalvey I-Reissue, II, and III have not been finalized, and thus requests the opportunity to amend or add claims and/or counts at the Examiner's suggestion to further support this request for a patent interference.

III. PROPOSED COUNTS AND COMPARISON OF CLAIMS

Applicant proposes the following sixty-seven counts in attached claim chart, Exhibit 4, showing how the claims of Dalvey I-Reissue, Dalvey II, and Dalvey III correspond to the counts and the claims of U.S. Patent Application Serial No. 09/980,466 (“Bamberg”). Applicant will amend or add claims and/or counts at the Examiner’s suggestion to further support this request for a patent interference.

IV. DETAILED EXPLANATION OF WHY APPLICANT WILL PREVAIL ON PRIORITY

A. PRIORITY DATE OF DALVEY I and DALVEY I-REISSUE

Dalvey I was filed on April 3, 2000, as a continuation-in-part application of U.S. Patent Application No. 09/391,910 (now abandoned) filed on September 9, 1999. Dalvey I issued on April 26, 2005 with Claims 1-14. On July 11, 2008, Jodi Schwendiman, previously known as Jodi Dalvey, (co-inventor and assignee of Dalvey I) filed “Dalvey I – Reissue” for U.S. Patent No. 6,884,311 (Dalvey I). Therefore, the priority date of Dalvey I and Dalvey I-Reissue is September 9, 1999.

B. PRIORITY DATE OF DALVEY II

Dalvey II was filed on August 4, 2004, as a division of application no. 09/541,845, filed on April 3, 2000, now U.S. Patent No. 6,884,311 (Dalvey I), which was a continuation-in-part application of U.S. Patent Application No. 09/391,910 filed on September 9, 1999, now abandoned. Dalvey II published on March 3, 2005 as U.S. Published Application No. 2005/0048230. Therefore, the priority date of Dalvey II is September 9, 1999.

C. PRIORITY DATE OF DALVEY III

Dalvey III was filed on February 21, 2008, as is a continuation of application no. 10/911,249 (Dalvey II), filed on August 4, 2004, which was a division of U.S. Patent Application No. 09/541,845, filed on April 3, 2000, now U.S. Patent No. 6,884,311 (Dalvey I), which was a continuation-in-part of application no. 09/391,910, filed on September 9, 1999, now abandoned. Therefore, the priority date of Dalvey III is September 9 1999.

D. PRIORITY DATE OF PRESENT APPLICATION

The Applicant filed the present U.S. Patent Application Serial No. 09/980,466 ("Application") with the United States Patent and Trademark Office on November 30, 2001 claiming priority to PCT/IB99/00976 with a priority date of June 1, 1999. Therefore, the priority date of the present Application is June 1, 1999.

E. PRESENT APPLICATION IS SENIOR TO DALVEY I, I-REISSUE, II, and III

Based upon the discussion contained in paragraphs A-D above, the priority date for the present application, June 1, 1999, predates the priority dates for Dalvey I, I-Reissue, II, and III, September 9, 1999 by three months and eight days. Therefore, the present Application has priority over Dalvey I, I-Reissue, II, and III.

V. SUPPORT OF AMENDED OR ADDED CLAIMS

Applicant has added new claims 45-58 in the present application which are identical or substantially similar to, excepting the claim numbers, respectively to claims 1-14 of Dalvey I-

Reissue. A claim chart, Exhibit 5, illustrates where in the Application's specification the claimed subject matter is disclosed.

Applicant has added new claims 59-90 in the present application which are identical or substantially similar to, excepting the claim numbers, respectively to claims 17, 19-26, 28-39, and 47-57 in Dalvey II. A claim chart, Exhibit 5, illustrates where in the Application's specification the claimed subject matter is disclosed.

Applicant has added new claims 91-111 in the present application which are identical or substantially similar to, excepting the claim numbers, respectively to claims 1-11 and 14-23 in Dalvey III. A claim chart, Exhibit 5, illustrates where in the Application's specification the claimed subject matter is disclosed.

Applicant will also amend or add claims and/or counts at the Examiner's suggestion to further support this request for a patent interference and provide a supporting claim chart at that time.

VI. CONSTRUCTIVE REDUCTION TO PRACTICE

The present application has a priority date of June 1, 1999. Attached below is a claim chart, Exhibit 6, showing where the disclosure of the present application provides constructive reduction to practice within the scope of the interfering subject matter.

VII. CONCLUSION

For the foregoing reasons, Applicant respectfully requests that a patent interference be declared between the present Application and "Dalvey I – Reissue" (U.S. Patent No. 6,884,311) as soon as the claims of "Dalvey I – Reissue" are finalized, Dalvey II (U.S. Published

Application No. 2005/0048230 A1), and Dalvey III (U.S. Published Application No. 2008/0149263 A1). The Applicant requests an opportunity, when Dalvey IV-VI are either published, issued, or finalized, to amend or add claims to further support this request for a patent interference with Dalvey IV –VI.

The USPTO is authorized to charge any additional fees incurred as a result of the filing hereof or credit any overpayment to our account #02-0900.

Respectfully submitted,

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EXHIBIT 1

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for transferring an image to a colored substrate comprising woven, fabric based material, or paper, comprising:
 - providing an image transfer sheet comprising an image transfer substrate; a release layer contacting the image transfer substrate and an image-imparting layer that comprises a polymer that includes indicia wherein the release layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment;
 - peeling the image transfer substrate from the image transfer sheet;
 - contacting at least the remaining portions of the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper; and
 - applying heat to at least the remaining portions of the image transfer sheet so that an image including indicia from the image-imparting layer is transferred from the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper wherein the image comprises a substantially white background or luminescent background and indicia.
2. (Original) The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is a fabric.
3. (Original) The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is black.
4. (Original) The method of claim 1 wherein the image imparting layer is impregnated with one or more of titanium oxide or other white pigment or luminescent material.
5. (Original) The method of claim 1 wherein the polymer of the image-imparting layer encapsulates the titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the colored substrate.

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6. (Currently Amended) An image transfer sheet, comprising:
a colored[[,]] substrate comprising woven, fabric based material, or paper;
a release layer overlaying the substrate, wherein the release layer is impregnated with titanium oxide or other white pigment or luminescent pigment; and
a polymer layer.
 7. (Original) The image transfer sheet of claim 6 wherein the polymer layer is comprised of titanium oxide or other white pigment.
 8. (Currently Amended) The image transfer ~~layer~~ sheet of claim 6 wherein the polymer layer comprises polypropylene.
 9. (Currently Amended) The image transfer ~~layer~~ sheet of claim 6 wherein the polymer layer comprises polyester or polyamide or a mixture of polyester and polyamide.
 10. (Original) A kit comprising the image transfer sheet of claim 6 and a colored fabric.
 11. (Original) The kit of claim 10 wherein the colored fabric is an article of clothing.
 12. (Original) The kit of claim 11 wherein the article of clothing is a T-shirt.
 13. (Original) The image transfer sheet of claim 6 wherein the polymer layer is a polyamide.
 14. (Original) The image transfer sheet of claim 6 wherein the polymer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.

EXHIBIT 2

IN THE CLAIMS

Please amend the claims as follows:

1-16. (Cancelled)

17. (Currently Amended) A method for making an image transfer sheet, comprising:

~~Providing~~ providing a release layer;

~~overlaying the release layer with a polymer member comprising an ink receptive portion,~~
~~the polymer member comprising an ink receptive portion effective for receiving imparted~~
~~indicia; and~~

~~impregnating~~ combining a portion of the polymer member with a titanium oxide or other
white pigment, thereby providing an opaque background for the imparted indicia.[];[]

~~imparting an image on the ink receptive portion;~~

~~wherein the release layer is effective for covering the image on the ink receptive portion~~
~~of the polymer when peeled from the polymer and for transferring heat from a heat source to the~~
~~polymer.~~

18. (Cancelled)

19. (Currently Amended) The method of claim 17, wherein the ink receptive portion is
effective for receiving ink jet imparted indicia ~~image is imparted by ink jet printing.~~

20. (Currently Amended) The method of claim 17, wherein the ~~titanium oxide or other white~~
~~pigment provides a~~ opaque background comprises a substantially white or luminescent
background.

21. (Currently Amended) A method for transferring an image to a colored or black substrate
~~comprising woven, fabric-based material, or paper,~~ comprising:

~~providing an image transfer sheet comprising a release layer, a base layer; and an image-~~
~~imparting portion that comprises a polymer and~~ configured to receive indicia, wherein one or

more of the image-imparting portion and the release layer comprise a titanium oxide or other white pigment or luminescent pigment;

contacting one or more portions of the image transfer sheet to the colored or black substrate comprising woven, fabric-based material, or paper so that the indicia face away from the colored or black substrate;

peeling the release layer and base layer from the image-imparting portion;

positioning the peeled release layer and base layer or parchment paper over the image imparting layer; and

applying heat to the release layer, base layer and image imparting portion one or more portions of the image transfer sheet so that the image-imparting portion received indicia and a substantially white background or luminescent background, provided by the pigment, [[is]] are concurrently transferred from a portion of the image transfer sheet to the colored or black substrate comprising woven, fabric-based material, or paper wherein the image comprises a substantially white background or luminescent background and indicia.

22. (Currently Amended) The method of claim 21, wherein the colored or black substrate ~~comprising woven, fabric-based material, or paper~~ is a fabric.

23. (Currently Amended) The method of claim 21, wherein the colored or black substrate ~~comprising woven, fabric-based material, or paper~~ is black.

24. (Currently Amended) The method of claim 21, wherein the image-imparting layer portion is impregnated with one or more of a titanium oxide or other white pigment or luminescent material.

25. (Currently Amended) The method of claim 24, wherein the polymer of the image-imparting layer portion encapsulates the ~~titanium oxide or other white pigment~~ substantially white or luminescent background and received indicia, and transfers the ~~titanium oxide or other white pigment~~ substantially white or luminescent background and received indicia in a pattern that forms the ~~indicia~~ an image on the colored or black substrate.

26. (Currently Amended) An article for imparting an image to a substrate comprising:
a release layer; and
one or more layers overlaying the release layer, comprising an ink receptive portion and a polymer that includes a titanium oxide or other white pigment[[,]];

wherein the ink receptive portion is effective for receiving ~~the image~~ indicia, and wherein the titanium oxide of other white pigment provides an opaque background for received indicia.

[[;]]

~~wherein the release layer is effective for covering the image received by the polymer when the release layer is peeled from the polymer.~~

27. (Cancelled)

28. (Currently Amended) The article of claim 26, wherein the ink receptive polymer portion comprises polypropylene.

29. (Currently Amended) The article of claim 26, wherein the ink receptive polymer portion comprises polyester or polyamide or a mixture of polyester and polyamide.

30. (Currently Amended) The article of claim 26, wherein the substrate is an article of clothing.

31. (Currently Amended) The article of claim 26, wherein the ink receptive polymer is a polyamide.

32. (Currently Amended) The article of claim 26, wherein the ~~ink receptive~~ polymer comprises LDPE, EAA, EVA, MAEA, or nylon, or mixtures of these polymers, or polyamide.

33. (Currently Amended) A method for making an image transfer sheet, comprising:
Providing providing a release base layer;

contacting the base layer with a release layer; and

contacting the release layer with an ink receptive polymer that includes a titanium oxide or other white pigment, wherein the ink receptive polymer is effective for receiving an image indicia and providing an opaque background for the indicia;

wherein the release base layer, when peeled away from the ink receptive polymer, or an overlay release paper is effective for covering the image indicia received by the ink receptive polymer ~~when the release layer is peeled from the polymer and covers the polymer~~ prior to an application of heat.

34. (Currently Amended) The method of claim 33, wherein the release base layer or the overlay release paper is effective for transferring heat from a heat source to the ink receptive polymer when ~~the release layer covers~~ covering the ink receptive polymer.

35. (Currently Amended) The method of claim 33, wherein, once contacted, at least a portion of the release layer is peelable from away from the ink receptive polymer layer with the base layer.

36. (Previously Presented) The method of claim 33, further comprising applying an image including received indicia and the opaque background to the ink receptive polymer.

37. (Currently Amended) The method of claim ~~[[34]]~~ 36, wherein the ~~image is applied to the ink receptive polymer~~ received indicia includes ink from an ink pen, ~~[[or]]~~ an ink jet printer, or a laser printer.

38. (Currently Amended) The article of claim 26, further comprising a colored~~[[,]]~~ or black substrate comprising woven, fabric, or paper based material~~[[,]]~~ ~~or paper~~ for receiving ~~[[the]]~~ an image including received indicia and the opaque background.

39. (Currently Amended) The article of claim 26, ~~further~~ wherein the ~~sheet~~ ink receptive portion comprises ~~an image~~ indicia.

40-46. (Cancelled)

47. (New) The method of claim 17, further comprising combining a portion of the release layer with a titanium oxide or other white pigment.

48. (New) The method of claim 17, further comprising providing a base layer underlying the release layer.

49. (New) The method of claim 48, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer member, or an overlay release paper is effective for covering the imparted indicia on the ink receptive portion and for transferring heat from a heat source to the polymer member.

50. (New) The method of claim 17, wherein overlaying the release layer with a polymer member includes overlaying the release layer with at least one ink receiving layer configured to receive imparted indicia, and one or both of an EAA resin layer or a white layer configured to provide the opaque background.

51. (New) The method of claim 21, wherein providing the image transfer sheet further comprises providing a base layer.

52. (New) The method of claim 51, further comprising peeling at least a portion of the release layer and the base layer away from the image-imparting portion.

53. (New) The method of claim 52, further comprising positioning the peeled release layer portion and the base layer, or a parchment release paper, over the image-imparting portion.

54. (New) The method of claim 53, wherein applying heat to the one or more portions of the image transfer sheet includes applying heat to one of the peeled release layer portion and the base layer or the parchment release paper, and the image-imparting portion.

55. (New) The article of claim 26, further comprising a base layer underlaying the release layer.

56. (New) The article of claim 55, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer and the ink receptive portion, or an overlay release paper is effective for covering received indicia.

57. (New) The method of claim 33, wherein the base layer is peeled away from the ink receptive polymer along a portion of the release layer.

EXHIBIT 3

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for transferring an image to a fabric, comprising:

~~Providing~~ obtaining an image transfer sheet, comprising an ink receptive portion~~[[;]]~~, an EAA resin, a silicone release coating and a base portion;

~~Applying the image transfer sheet to the fabric so that the ink receptive portion and the EAA resin contact the fabric;~~

~~Peeling~~ peeling the silicone release coating and the base portion from the EAA resin and the ink receptive coating portion;

applying at least the non-peeled portions of the image transfer sheet to the fabric so that the EAA resin contacts the fabric;

~~Applying~~ applying one of the peeled silicone release portion coating and the base portion or an overlay release paper over at least the ink receptive portion and the EAA resin and fabric;
and

~~Applying~~ applying heat to one of the peeled silicone release portion coating and the base portion or the overlay release paper, the ink receptive portion, the EAA resin and the fabric.

2. (Currently Amended) An image transfer sheet, comprising:

[[An]] an ink receptive portion;

[[An]] an EAA resin or polymer having a melt point of about 20 degrees C to about 300 degrees C contacting the ink receptive portion, the EAA resin or polymer including one or more pigments providing an opaque background for indicia received at least by the ink receptive portion;

[[A]] a silicone release portion; and

[[A]] a base paper portion;

wherein the silicone release portion and the base paper portion are separable from the ink receptive portion and the EAA resin or polymer.

3. (Currently Amended) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, ~~or paper~~, the method comprising:

~~Providing~~ providing an image transfer sheet comprising ~~a release layer~~, ~~[[an]]~~ a coated image transfer substrate base~~[[,]]~~ and an image imparting portion, ~~the image imparting portion~~ comprising ~~[[a]]~~ at least one polymer and an ink receptive coating ~~and an image~~, wherein the ~~release layer~~ coated image transfer substrate base is contactable to a surface of the image~~[[~~-
]]imparting portion~~[[,]]~~;

wherein the coated image transfer substrate base is peelable from the image imparting portion and positionable over the image imparting portion;

wherein the image imparting layer ~~being portion is~~ is contactable to the colored or black substrate~~[[,]]~~ ~~or paper~~ wherein the such that imparted indicia image faces face away from the colored or black substrate ~~or paper~~~~[[,]]~~; wherein the ~~image transfer substrate base and release layer are peelable from the image imparting portion and positionable over the image imparting portion; and~~

wherein heat is applicable to the ~~release layer~~~~[[,]]~~ coated image transfer substrate base ~~layer~~ and the image imparting layer portion so that ~~[[the]]~~ imparted indicia image is ~~transferred~~ transferable to the colored or black substrate.

4. (Currently Amended) The method of claim 3, further comprising providing an overlay parchment paper positionable over the image imparting layer portion, in lieu of the coated image transfer substrate base, prior to the application of heat.

5. (Currently Amended) A method for making an image transfer sheet, comprising:

~~providing a release layer~~ obtaining a coated substrate;
~~overlaying the release layer~~ coated substrate with ~~[[a]]~~ one or more polymer polymers;
~~impregnating combining the polymer~~ at least one of the one or more polymers with a titanium oxide or other white or luminescent pigment, thereby forming an opaque background;
~~contacting the polymer with a resin layer, the resin layer optionally comprising a titanium oxide or other white pigment; and~~
overlaying the one or more polymer polymers or resin layer with an ink receptive

layer[[.]];

~~imparting an image on the ink receptive portion;~~

~~wherein the coated substrate the release layer, when peeled from the one or more polymers and the ink receptive layer, or an overlay release paper is effective for covering the an image comprising indicia receivable by the ink receptive layer and the opaque background on the ink receptive portion of the polymer when peeled from the polymer and for transferring heat from a heat source to at least the ink receptive layer and the one or more polymers the polymer.~~

6. (Currently Amended) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, ~~or paper~~, the method comprising:

~~Providing~~ providing an image transfer sheet comprising ~~a release layer~~, a coated base, a resin and an ink jet printable layer ~~having an image configured to receive indicia~~, wherein the ~~release layer coated base~~ is contactable to the resin[[.]];

~~wherein the coated base is peelable from the resin and the ink jet printable layer and positionable over the resin and the ink jet printable layer;~~

~~wherein the resin being is~~ is contactable to the colored or black substrate, ~~or paper wherein such that the ink jet printable layer with image received indicia faces face~~ away from the colored or black substrate ~~or paper~~[[.]]; and

~~wherein the base and release layer are peelable from the resin and positionable over the ink jet printable layer;~~

~~wherein heat is applicable to the release layer, coated base layer and, the ink jet printable layer, and the resin so that the image is transferred transferable~~ transferable to the colored or black substrate.

7. (Currently Amended) A method for making an image transfer sheet, comprising:

~~providing a release layer~~ obtaining a coated substrate;

~~overlaying the release layer~~ coated substrate with a polymer;

~~impregnating the polymer with a titanium oxide or other white pigment;~~

~~contacting overlaying or underlaying the polymer with a resin layer, the resin layer, optionally comprising a titanium oxide or other white pigment;~~

combining at least one of the polymer or the resin layer with a titanium oxide or other

white pigment, thereby forming an opaque background; and

overlaying the polymer [[or]] and the resin layer with an ink receptive layer[.];

imparting an image on the ink receptive portion;

wherein the ~~release layer~~ coated substrate, when peeled from the polymer, the resin layer and the ink receptive layer, or a release paper or parchment is effective for covering the an image comprising indicia receivable by the ink receptive layer and the opaque background on the ink receptive portion of the polymer when peeled from the polymer and for transferring heat from a heat source to at least the ink receptive layer, the resin, and the polymer.

8. (New) The method of claim 1, further comprising imparting indicia to the ink receptive portion using at least one of a copying or printing process.
9. (New) The method of claim 8, wherein one or both of the ink receptive portion or the EAA resin includes a titanium oxide or other white or luminescent pigment providing an opaque background for imparted indicia.
10. (New) The method of claim 9, wherein applying at least the non-peeled portions of the image transfer sheet to the fabric includes simultaneously applying an image comprising imparted indicia and the opaque background to the fabric.
11. (New) The method of claim 1, wherein the image transfer sheet further comprises a white layer disposed between the ink receptive portion and the EAA resin or between the EAA resin and the silicone release coating.
12. (New) The sheet of claim 2, wherein the silicone release portion includes a weight of about 40 grams/square meter to about 250 grams/square meter.
13. (New) The sheet of claim 2, wherein the silicone release portion includes a release value of about 10 grams/inch to about 2500 grams/inch.

14. (New) The method of claim 3, wherein the image imparting portion comprises a white or luminescent pigment that provides an opaque background for imparted indicia.
15. (New) The method of claim 15, wherein an EAA polymer layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.
16. (New) The method of claim 15, wherein a polymeric white layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.
17. (New) The method of claim 15, wherein the ink receptive coating of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.
18. (New) The method of claim 5, wherein overlaying the coated substrate with one or more polymers includes overlaying the coated substrate with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.
19. (New) The method of claim 5, wherein overlaying the coated substrate with one or more polymers includes overlaying the coated substrate with a polymeric white layer and an EAA resin layer.
20. (New) The method of claim 6, further comprising providing an overlay parchment paper positionable over the ink jet printable layer and the resin, in lieu of the coated base, prior to the application of heat.
21. (New) The method of claim 6, wherein the ink jet printable layer includes at least one of low density polyethylene, ethylene acid, or nylon.

PRELIMINARY AMENDMENT

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Title: METHOD OF IMAGE TRANSFER ON A COLORED BASE

Page 7

Dkt: 1010.021US3

22. (New) The method of claim 7, wherein the ink receptive layer includes a melt temperature of about 20 degrees C to about 225 degrees C.
23. (New) The method of claim 7, wherein the polymer comprises a white layer and the resin layer includes EAA.

EXHIBIT 4

EXHIBIT 4

Dalvey I-Reissue U.S. Reissue Patent Application Serial No. 12/218,260	Interference Count	U.S. Patent Application Serial No. 09/980,466 Bamberg
Claims 1-14	Counts 1-14	Claims 45-58
<p>1. A method for transferring an image to a colored substrate comprising woven, fabric based material, or paper, comprising: providing an image transfer sheet comprising an image transfer substrate; a release layer contacting the image transfer substrate and an image-imparting layer that comprises a polymer that includes indicia wherein the release layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment; peeling the image transfer substrate from the image transfer sheet; contacting at least the remaining portions of the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper; and applying heat to at least the remaining portions of the image transfer sheet so that an image including indicia from the image-imparting layer is transferred from the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper wherein the image comprises a substantially white background or luminescent background and indicia.</p>	<p>1. A method for transferring an image to a dark substrate comprising woven, fabric based material or paper: providing a transfer print comprising: a carrier material; an adhesive layer contacting the carrier material; and an ink-receiving layer that comprises a polymer that includes indicia wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment; peeling the carrier material from the transfer print; contacting at least the remaining portions of the transfer print to the dark substrate comprising woven, fabric based material or paper; and applying heat to the at least the remaining portions of transfer print so that an image including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper wherein the image comprises a substantially white background or luminescent background and indicia.</p>	<p>45. A method for transferring an image to a dark substrate comprising woven, fabric based material or paper: providing a transfer print comprising: a carrier material; an adhesive layer contacting the carrier material; and an ink-receiving layer that comprises a polymer that includes indicia wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment; peeling the carrier material from the transfer print; contacting at least the remaining portions of the transfer print to the dark substrate comprising woven, fabric based material or paper; and applying heat to the at least the remaining portions of transfer print so that an image including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper wherein the image comprises a substantially white background or luminescent background and indicia.</p>

2. The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is a fabric.	2. The method of count 1 wherein the dark substrate comprising woven, fabric based material or paper is a textile.	46. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is a textile.
3. The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is black.	3. The method of count 1 wherein the dark substrate comprising woven, fabric based material or paper is black.	47. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is black.
4. The method of claim 1 wherein the image imparting layer is impregnated with one or more of titanium oxide or other white pigment or luminescent material.	4. The method of count 1 wherein the ink-receiving layer is situated on the white background layer containing one or more of titanium oxide or other white pigment or luminescent material.	48. The method of claim 45 wherein the ink-receiving layer is situated on the white background layer containing one or more of titanium oxide or other white pigment or luminescent material.
5. The method of claim 1 wherein the polymer of the image-imparting layer encapsulates the titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the colored substrate.	5. The method of count 1 wherein the polymer of the ink-receiving layer is applied on the white background layer having titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the dark substrate.	49. The method of claim 45 wherein the polymer of the ink-receiving layer is applied on the white background layer having titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the dark substrate.
6. An image transfer sheet, comprising: a colored substrate comprising woven, fabric based material, or paper; a release layer overlaying the substrate, wherein the release layer is impregnated with titanium oxide or other white pigment or luminescent pigment; and a polymer layer.	6. A transfer print, comprising: a dark substrate comprising woven, fabric based material or carrier material having paper; an adhesive layer overlaying the carrier material or dark substrate, wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and an ink-receiving layer having polymer.	50. (New) A transfer print, comprising: a dark substrate comprising woven, fabric based material or carrier material having paper; an adhesive layer overlaying the carrier material or dark substrate, wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and an ink-receiving layer having polymer.

7. The image transfer sheet of claim 6 wherein the polymer layer is comprised of titanium oxide or other white pigment.	7. The transfer print of count 6 wherein the ink-receiving layer is situated on the white background layer having titanium oxide or other white pigment.	51. The transfer print of claim 50 wherein the ink-receiving layer is situated on the white background layer having titanium oxide or other white pigment.
8. The image transfer sheet of claim 6 wherein the polymer layer comprises polypropylene.	8. The transfer print of count 6 wherein the ink-receiving layer comprises polypropylene.	52. The transfer print of claim 50 wherein the ink-receiving layer comprises polypropylene.
9. The image transfer sheet of claim 6 wherein the polymer layer comprises polyester or polyamide or a mixture of polyester and polyamide.	9. The transfer print of count 6 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.	53. The transfer print of claim 50 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.
10. A kit comprising the image transfer sheet of claim 6 and a colored fabric.	10. A kit comprising the transfer print of count 6 and a dark textile.	54. A kit comprising the transfer print of claim 50 and a dark textile.
11. The kit of claim 10 wherein the colored fabric is an article of clothing.	11. The kit of count 10 wherein the dark textile is an article of clothing.	55. The kit of claim 54 wherein the dark textile is an article of clothing.
12. The kit of claim 11 wherein the article of clothing is a T-shirt.	12. The kit of count 11 wherein the article of clothing is a T-shirt.	56. The kit of claim 55 wherein the article of clothing is a T-shirt.
13. The image transfer sheet of claim 6 wherein the polymer layer is a polyamide.	13. The transfer print of count 6 wherein the ink-receiving layer is a polyamide.	57. The transfer print of claim 50 wherein the ink-receiving layer is a polyamide.
14. The image transfer sheet of claim 6 wherein the polymer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.	14. The transfer print of count 6 wherein the ink-receiving layer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.	58. The transfer print of claim 50 wherein the ink-receiving layer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.

Dalvey II U.S. Patent Application No. 10/911,429	Interference Count	U.S. Patent Application Serial No. 09/980,466 Bamberg
Claims 17, 19-26, 28-39, and 47-57	Counts 15-46	Claims 59-90
17. A method for making an image transfer sheet, comprising: providing a release layer; overlaying the release layer with a polymer member, the polymer member comprising an ink receptive polymer portion effective for receiving imparted indicia; and combining a portion of the polymer member with a titanium oxide or other white pigment, thereby providing an opaque background for the imparted indicia.	15. A method for making a transfer print, comprising: providing an adhesive layer; overlaying the adhesive layer with a polymer member, the polymer member comprising an ink-receiving layer effective for receiving imparted image; and combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image.	59. A method for making a transfer print, comprising: providing an adhesive layer; overlaying the adhesive layer with a polymer member, the polymer member comprising an ink-receiving layer effective for receiving imparted image; and combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image.
19. The method of claim 17, wherein the ink receptive portion is effective for receiving ink jet imparted indicia.	16. The method of count 15 wherein the ink-receiving layer is effective for receiving ink jet imparted image.	60. The method of claim 59 wherein the ink-receiving layer is effective for receiving ink jet imparted image.
20. The method of claim 17, wherein the opaque background comprises a substantially white or luminescent background.	17. The method of count 15 wherein the opaque background comprises a substantially white or luminescent background.	61. The method of claim 59 wherein the opaque background comprises a substantially white or luminescent background.
21. A method for transferring an image to a colored or black substrate, comprising: providing an image transfer sheet comprising a release layer, and an image-imparting portion that comprises a polymer configured to receive indicia, wherein one or more of the image-imparting portion and the release layer comprise	18. A method for transferring an image to a dark substrate comprising woven, fabric based material, or paper comprising: providing a transfer print comprising (i) an adhesive layer, (ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving	62. A method for transferring an image to a dark substrate comprising woven, fabric based material, or paper comprising: providing a transfer print comprising (i) an adhesive layer, (ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving

<p>a titanium oxide or other white pigment or luminescent pigment; contacting one or more portions of the image transfer sheet to the colored or black substrate; and applying heat to the one or more portions of the image transfer sheet so that received indicia and a substantially white background or luminescent background, provided by the pigment, are concurrently transferred from a portion of the image transfer sheet to the colored or black substrate.</p>	<p>layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment; contacting one or more portions of the transfer print to the dark substrate; applying heat to one or more portions of the transfer print so that received image and the white background layer, provided by the pigment, are concurrently transferred from a portion of the transfer print to the dark substrate.</p>	<p>layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment; contacting one or more portions of the transfer print to the dark substrate; applying heat to one or more portions of the transfer print so that received image and the white background layer, provided by the pigment, are concurrently transferred from a portion of the transfer print to the dark substrate.</p>
<p>22. The method of claim 21, wherein the colored or black substrate is a fabric.</p>	<p>19. The method of count 18 wherein the dark substrate is a textile.</p>	<p>63. The method of claim 62 wherein the dark substrate is a textile.</p>
<p>23. The method of claim 21, wherein the colored or black substrate is black.</p>	<p>20. The method of count 18 wherein the dark substrate is black.</p>	<p>64. The method of claim 62 wherein the dark substrate is black.</p>
<p>24. The method of claim 21, wherein the image-imparting portion is impregnated with one or more of a titanium oxide or other white pigment or luminescent material.</p>	<p>21. The method of count 18 wherein the ink-receiving layer is impregnated with the white background layer having one or more of a titanium oxide or other white pigment or luminescent material.</p>	<p>65. The method of claim 62 wherein the ink-receiving layer is impregnated with the white background layer having one or more of a titanium oxide or other white pigment or luminescent material.</p>
<p>25. The method of claim 24, wherein the polymer of the image imparting portion encapsulates the substantially white or luminescent background and received indicia, and transfers the substantially white or luminescent background and received indicia in a pattern that forms an image on the colored or black substrate.</p>	<p>22. The method of count 18 wherein the polymer of the ink-receiving layer encapsulates the white background layer and receiving image, and transfers the white background layer and the receiving image in a pattern that forms an image on the dark substrate.</p>	<p>66. The method of claim 62 wherein the polymer of the ink-receiving layer encapsulates the white background layer and receiving image, and transfers the white background layer and the receiving image in a pattern that forms an image on the dark substrate.</p>

<p>26. An article for imparting an image to a substrate comprising: a release layer; and one or more layers overlaying the release layer, comprising an ink receptive portion and a polymer that includes a titanium oxide or other white pigment; wherein the ink receptive portion is effective for receiving indicia, and wherein the titanium oxide or other white pigment provides an opaque background for received indicia.</p>	<p>23. An article for imparting an image to a substrate comprising: an adhesive layer; one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink-receiving layer is effective for receiving the image; wherein the adhesive layer is effective for receiving image, and wherein the white background layer provides an opaque background for received image.</p>	<p>67. An article for imparting an image to a substrate comprising: an adhesive layer; one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink-receiving layer is effective for receiving the image; wherein the adhesive layer is effective for receiving image, and wherein the white background layer provides an opaque background for received image.</p>
<p>28. The article of claim 26, wherein the ink receptive portion comprises polypropylene.</p>	<p>24. The article of count 23 wherein the ink-receiving layer comprises polypropylene.</p>	<p>68. The article of claim 67 wherein the ink-receiving layer comprises polypropylene.</p>
<p>29. The article of claim 26, wherein the ink receptive portion comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>25. The article of count 23 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>69. The article of claim 67 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>
<p>30. The article of claim 26, wherein the substrate is an article of clothing.</p>	<p>26. The article of count 23 wherein the substrate is an article of clothing.</p>	<p>70. The article of claim 67 wherein the substrate is an article of clothing.</p>
<p>31. The article of claim 26, wherein the ink receptive polymer is a polyamide.</p>	<p>27. The article of count 23 wherein the polymer of the ink-receiving layer is a polyamide.</p>	<p>71. The article of claim 67 wherein the polymer of the ink-receiving layer is a polyamide.</p>
<p>32. The article of claim 26, wherein the polymer LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>	<p>28. The article of count 23 wherein the polymer comprises LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>	<p>72. The article of claim 67 wherein the polymer comprises LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>

<p>33. A method for making an image transfer sheet, comprising: providing a base layer; contacting the base layer with a release layer; and contacting the release layer with an ink-receptive polymer that includes a titanium oxide or other white pigment, wherein the ink-receptive polymer is effective for receiving indicia and providing an opaque background for the indicia; wherein the base layer, when peeled away from the ink-receptive polymer, or an overlay release paper is effective for covering indicia received by the ink-receptive polymer prior to an application of heat.</p>	<p>29. A method for making a transfer print, comprising: providing a carrier material contacting the carrier material with an adhesive layer; contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink-receptive polymer is effective for receiving an image and providing an opaque background for the image; and wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.</p>	<p>73. A method for making a transfer print, comprising: providing a carrier material contacting the carrier material with an adhesive layer; contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink-receptive polymer is effective for receiving an image and providing an opaque background for the image; and wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.</p>
<p>34. The method of claim 33, wherein the base layer or the overlay release paper is effective for transferring heat from a heat source to the ink-receptive polymer when covering the ink-receptive polymer.</p>	<p>30. The method of claim 29 wherein the carrier material or the cover layer is effective for transferring heat from a heat source to the ink-receptive polymer when covering the ink-receptive polymer.</p>	<p>74. The method of claim 73 wherein the carrier material or the cover layer is effective for transferring heat from a heat source to the ink-receptive polymer when covering the ink-receptive polymer.</p>
<p>35. The method of claim 33, wherein, once contacted, at least a portion of the release layer is peelable away from the ink-receptive polymer with the base layer.</p>	<p>31. The method of claim 29 wherein, once contacted, at least a portion of the adhesive layer is peelable from the ink-receptive layer with the carrier material.</p>	<p>75. The method of claim 73 wherein, once contacted, at least a portion of the adhesive layer is peelable from the ink-receptive layer with the carrier material.</p>
<p>36. The method of claim 33, further comprising applying an image including received indicia and the opaque background to the ink-receptive polymer.</p>	<p>32. The method of claim 29, further comprising applying an image including received image and the opaque background to the ink-receptive polymer.</p>	<p>76. The method of claim 73, further comprising applying an image including received image and the opaque background to the ink-receptive polymer.</p>

37. The method of claim 36, wherein the received indicia includes ink from an ink pen, an ink jet printer, or a laser printer.	33. The method of count 32, wherein the received image includes ink from an ink pen, an ink jet printer, or a laser printer.	77. The method of claim 76, wherein the received image includes ink from an ink pen, an ink jet printer, or a laser printer.
38. The article of claim 26, further comprising a colored or black substrate comprising woven, fabric, or paper based material, or paper for receiving an image including received indicia and the opaque background.	34. The article of count 23, further comprising a dark substrate comprising textiles or paper based material for receiving the image including received image and the opaque background.	78. The article of claim 67, further comprising a dark substrate comprising textiles or paper based material for receiving the image including received image and the opaque background.
39. The article of claim 26, wherein the ink receptive portion comprises indicia.	35. The article of count 23, further wherein the ink-receiving layer comprises an image.	79. The article of claim 67, further wherein the ink-receiving layer comprises an image.
47. The method of claim 17, further comprising combining a portion of the release layer with a titanium oxide or other white pigment.	36. The method of count 15, further comprising combining a portion of the adhesive layer with a white background layer having a titanium oxide or other white pigment.	80. The method of claim 59, further comprising combining a portion of the adhesive layer with a white background layer having a titanium oxide or other white pigment.
48. The method of claim 17, further comprising providing a base layer underlaying the release layer.	37. The method of count 15, further comprising providing a carrier material underlaying the adhesive layer.	81. The method of claim 59, further comprising providing a carrier material underlaying the adhesive layer.
49. The method of claim 48, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer member, or an overlay release paper is effective for covering the imparted indicia on the ink receptive portion and for transferring heat from a heat source to the polymer member.	38. The method of count 37, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer member, or a cover layer is effective for covering the imparted image on the ink receiving layer and for transferring heat from a heat source to the polymer member.	82. The method of claim 81, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer member, or a cover layer is effective for covering the imparted image on the ink receiving layer and for transferring heat from a heat source to the polymer member.

50. The method of claim 17, wherein overlaying the release layer with a polymer member includes overlaying the release layer with at least one ink receiving layer configured to receive imparted indicia, and one or both of an EAA resin layer or a white layer configured to provide the opaque background.	39. The method of count 15, wherein overlaying the adhesive layer with a polymer member includes overlaying the adhesive layer with at least one ink-receiving layer configured to receive imparted image, and one or both of an EAA resin or a white background layer configured to provide the opaque background.	83. The method of claim 59, wherein overlaying the adhesive layer with a polymer member includes overlaying the adhesive layer with at least one ink-receiving layer configured to receive imparted image, and one or both of an EAA resin or a white background layer configured to provide the opaque background.
51. The method of claim 21, wherein providing the image transfer sheet further comprises providing a base layer.	40. The method of count 18, wherein providing the transfer print further comprises a carrier material.	84. The method of claim 62, wherein providing the transfer print further comprises a carrier material.
52. The method of claim 51, further comprising peeling at least a portion of the release layer and the base layer away from the image-imparting portion.	41. The method of count 40, further comprising peeling at least a portion of the adhesive layer and the carrier material away from the ink-receiving layer.	85. The method of claim 84, further comprising peeling at least a portion of the adhesive layer and the carrier material away from the ink-receiving layer.
53. The method of claim 52, further comprising positioning the peeled release layer portion and the base layer, or a parchment release paper, over the image-imparting portion.	42. The method of count 41, further comprising positioning the peeled adhesive layer and the carrier material, or a cover layer, over the ink-receiving layer.	86. The method of claim 84, further comprising positioning the peeled adhesive layer and the carrier material, or a cover layer, over the ink-receiving layer.
54. The method of claim 53, wherein applying heat to the one or more portions of the image transfer sheet includes applying heat to one of the peeled release layer portion and the base layer or the parchment release paper, and the image-imparting portion.	43. The method of count 42, wherein applying heat to the one or more portions of the transfer print includes applying heat to one of the peeled adhesive layers and the carrier material or the cover layer, and the ink-receiving layer.	87. The method of claim 86, wherein applying heat to the one or more portions of the transfer print includes applying heat to one of the peeled adhesive layers and the carrier material or the cover layer, and the ink-receiving layer.
55. The article of claim 26, further comprising a base layer underlaying the release layer.	44. The article of count 23, further comprising a carrier material underlaying the	88. The article of claim 67, further comprising a carrier material underlaying the

<p>56. The article of claim 55, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer and the ink receptive portion, or an overlay release paper is effective for covering received indicia.</p> <p>57. The method of claim 33, wherein the base layer is peeled away from the ink receptive polymer along a portion of the release layer.</p>	<p>adhesive layer.</p> <p>45. The article of count 44, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer and the ink-receptive layer, or a cover layer is effective for covering received image.</p> <p>46. The method of count 29, wherein the carrier material is peeled away from the ink-receptive polymer along a portion of the adhesive layer.</p>	<p>adhesive layer.</p> <p>89. The article of claim 88, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer and the ink-receptive layer, or a cover layer is effective for covering received image.</p> <p>90. The method of claim 73, wherein the carrier material is peeled away from the ink-receptive polymer along a portion of the adhesive layer.</p>
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Dalvey III U.S. Patent Application No. 12/034,932	Interference Count	U.S. Patent Application Serial No. 09/980,466 Bamberg
Claims 1-11 and 14-23	Counts 47-67	Claims 91-111
<p>1. A method for transferring an image to a fabric, comprising: obtaining an image transfer sheet, comprising an ink receptive portion, an EAA resin, a silicone release coating and a base portion; peeling the silicone release coating and the base portion from the EAA resin and the ink receptive portion; applying at least the non-peeled portions of the image transfer sheet to the fabric so that the EAA resin contacts the fabric; applying one of the peeled silicone release coating and the base portion or an overlay release paper over at least the ink receptive portion and the EAA resin; and applying heat to one of the peeled silicone release coating and the base portion or the overlay release paper, the ink receptive portion, the EAA resin and the fabric.</p> <p>2. An image transfer sheet, comprising: an ink receptive portion; an EAA resin or polymer having a melt point of about 20 degrees C to about 300 degrees C contacting the ink receptive portion, the EAA resin or polymer including one or more pigments providing an opaque background for indicia received at least by the ink</p>	<p>47. A method for transferring an image to a textile, comprising: obtaining a (i) transfer print comprising (ii) an ink receiving layer; (iii) an adhesive layer having an EAA resin, and (iv) a carrier material having silicone; peeling the carrier material having silicone from the adhesive layer containing an EAA resin and ink receiving layer; applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile; applying one of the peeled carrier material or a cover layer over at least the ink-receiving layer and the adhesive layer having EAA resin; and applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.</p> <p>48. A transfer print, comprising: an ink receiving layer; an adhesive layer having an EAA resin or polymer having a melt point of about 20 °C to about 300°C contacting the ink-receiving layer; the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image</p>	<p>91. A method for transferring an image to a textile, comprising: obtaining a (i) transfer print comprising (ii) an ink receiving layer; (iii) an adhesive layer having an EAA resin, and (iv) a carrier material having silicone; peeling the carrier material having silicone from the adhesive layer containing an EAA resin and ink receiving layer; applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile; applying one of the peeled carrier material or a cover layer over at least the ink-receiving layer and the adhesive layer having EAA resin; and applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.</p> <p>92. A transfer print, comprising: an ink receiving layer; an adhesive layer having an EAA resin or polymer having a melt point of about 20 °C to about 300°C contacting the ink-receiving layer; the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image</p>

<p>receptive portion; a silicone release portion; and a base paper portion; wherein the silicone release portion and the base paper portion are separable from the ink receptive portion and the EAA resin or polymer.</p>	<p>received at least by the ink receiving layer; and a carrier material having silicone; and wherein the carrier material is separable from the ink-receiving layer and the adhesive layer having an EAA resin or polymer.</p>	<p>received at least by the ink receiving layer; and a carrier material having silicone; and wherein the carrier material is separable from the ink-receiving layer and the adhesive layer having an EAA resin or polymer.</p>
<p>3. A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, the method comprising: providing an image transfer sheet comprising a coated image transfer substrate base and an image imparting portion, the image imparting portion comprising at least one polymer and an ink receptive coating, wherein the coated image transfer substrate base is contactable to a surface of the image imparting portion; wherein the coated image transfer substrate base is peelable from the image imparting portion and positionable over the image imparting portion; wherein the image imparting portion is contactable to the colored or black substrate such that imparted indicia face away from the colored or black substrate; and wherein heat is applicable to the coated image transfer substrate base and the image imparting portion so that imparted indicia is transferable to the colored or black substrate.</p>	<p>49. A method for enabling transfer of an image to a dark substrate or paper, the method comprising: providing a transfer print comprising a carrier material, and an ink-receiving layer comprising at least one polymer and an ink-receptive coating, wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer; wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate; wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p>	<p>93. A method for enabling transfer of an image to a dark substrate or paper, the method comprising: providing a transfer print comprising a carrier material, and an ink-receiving layer comprising at least one polymer and an ink-receptive coating, wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer; wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate; wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p>

4. The method of claim 3, further comprising providing an overlay parchment paper positionable over the image imparting portion, in lieu of the coated image transfer substrate base, prior to the application of heat.	50. The method of count 49, further comprising providing a cover layer positionable over the ink-receiving layer, in lieu of the carrier material, prior to the application of heat.	94. The method of claim 93, further comprising providing a cover layer positionable over the ink-receiving layer, in lieu of the carrier material, prior to the application of heat.
5. A method for making an image transfer sheet, comprising: obtaining a coated substrate; overlaying the coated substrate with one or more polymers; combining at least one of the one or more polymers with a titanium oxide or other white or luminescent pigment, thereby forming an opaque background; and overlaying the one or more polymers with an ink receptive layer; wherein the coated substrate, when peeled from the one or more polymers and the ink receptive layer, or an overlay release paper is effective for covering an image comprising indicia receivable by the ink receptive layer and the opaque background and for transferring heat from a heat source to at least the ink receptive layer and the one or more polymers.	51. A method for making a transfer print, comprising: obtaining a carrier material; overlaying the carrier material with one or more polymers; applying a white background layer having a titanium oxide or other white pigment to the polymer; combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background; overlaying the one or more polymers with an ink receiving layer; wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising the image receivable by the ink-receiving layer and the opaque background; and for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.	95. A method for making a transfer print, comprising: obtaining a carrier material; overlaying the carrier material with one or more polymers; applying a white background layer having a titanium oxide or other white pigment to the polymer; combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background; overlaying the one or more polymers with an ink receiving layer; wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising the image receivable by the ink-receiving layer and the opaque background; and for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.
6. A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material,	52. A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising: providing a transfer print	96. A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising: providing a transfer print

<p>the method comprising: providing an image transfer sheet comprising a coated base, a resin and an ink jet printable layer configured to receive indicia, wherein the coated base is contactable to the resin; wherein the coated base is peelable from the resin and the ink jet printable layer and positionable over the resin and the ink jet printable layer; wherein the resin is contactable to the colored or black substrate, such that received indicia face away from the colored or black substrate; and wherein heat is applicable to the coated base, the ink jet printable layer, and the resin so that the image is transferable to the colored or black substrate.</p>	<p>comprising a carrier material, an adhesive layer having resin and an ink-receiving layer configured to receive an image, wherein the carrier material is contactable to the adhesive layer having resin; wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer; wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and wherein heat is applicable to the carrier material, the ink-receiving layer, and the adhesive layer having resin so that the image is transferable to the dark substrate.</p>	<p>comprising a carrier material, an adhesive layer having resin and an ink-receiving layer configured to receive an image, wherein the carrier material is contactable to the adhesive layer having resin; wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer; wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and wherein heat is applicable to the carrier material, the ink-receiving layer, and the adhesive layer having resin so that the image is transferable to the dark substrate.</p>
<p>7. A method for making an image transfer sheet, comprising: obtaining a coated substrate; overlaying the coated substrate with a polymer; overlaying or underlaying the polymer with a resin layer, combining at least one of the polymer or the resin layer with a titanium oxide or other white pigment, thereby forming an opaque background; and overlaying the polymer and the resin layer with an ink receptive layer; wherein coated substrate, when peeled from the polymer, the resin layer</p>	<p>53. A method for making a transfer print, comprising: obtaining a carrier material; overlaying the carrier material with a polymer; overlaying or underlaying the carrier material having a polymer with an adhesive layer having a resin; combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and overlaying the carrier material having a polymer with the adhesive layer having a resin;</p>	<p>97. A method for making a transfer print, comprising: obtaining a carrier material; overlaying the carrier material with a polymer; overlaying or underlaying the carrier material having a polymer with an adhesive layer having a resin; combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and overlaying the carrier material having a polymer with the adhesive layer having a resin;</p>

and the ink receptive layer, or a release paper is effective for covering an image comprising indicia receivable by the ink receptive layer and the opaque background and for transferring heat from a heat source to at least the ink receptive layer, the resin, and the polymer.	wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having the polymer.	wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having the polymer.
8. The method of claim 1, further comprising imparting indicia to the ink receptive portion using at least one of a copying or printing process.	54. The method of count 47, further comprising imparting image to the ink receiving layer using at least one of a copying or printing process.	98. The method of claim 91, further comprising imparting image to the ink receiving layer using at least one of a copying or printing process.
9. The method of claim 8, wherein one or both of the ink receptive portion or the EAA resin includes a titanium oxide or other white or luminescent pigment providing an opaque background for imparted indicia.	55. The method of count 54, wherein one or both of the ink receiving layer or the adhesive layer having EAA resin includes a white background layer having titanium oxide or other white or luminescent pigment providing an opaque background for imparted image.	99. The method of claim 98, wherein one or both of the ink receiving layer or the adhesive layer having EAA resin includes a white background layer having titanium oxide or other white or luminescent pigment providing an opaque background for imparted image.
10. The method of claim 9, wherein applying at least the non-peeled portions of the image transfer sheet to the fabric includes simultaneously applying an image comprising imparted indicia and the opaque background to the fabric.	56. The method of count 55, wherein applying at least the non-peeled portions of the transfer print to the textile includes simultaneously applying an image comprising imparted image and the opaque background to the textile.	100. The method of claim 99, wherein applying at least the non-peeled portions of the transfer print to the textile includes simultaneously applying an image comprising imparted image and the opaque background to the textile.
11. The method of claim 1, wherein the image transfer sheet further comprises a white layer disposed between	57. The method of count 47 , wherein the transfer print further comprises a white background layer disposed	101. The method of claim 91, wherein the transfer print further comprises a white background layer disposed

the ink receptive portion and the EAA resin or between the EAA resin and the silicone release coating.	between the ink receiving layer and the adhesive layer having EAA resin or between the adhesive layer having EAA resin and the carrier material having silicone.	between the ink receiving layer and the adhesive layer having EAA resin or between the adhesive layer having EAA resin and the carrier material having silicone.
14. The method of claim 3, wherein the image imparting portion comprises a white or luminescent pigment that provides an opaque background for imparted indicia.	58. The method of count 49, wherein the ink-receiving layer comprises a white background layer having a white or luminescent pigment that provides an opaque background for imparted image.	102. The method of claim 93, wherein the ink-receiving layer comprises a white background layer having a white or luminescent pigment that provides an opaque background for imparted image.
15. The method of claim 15, wherein an EAA polymer layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.	59. The method of count 58, wherein an adhesive layer having an EAA polymer comprises a white background layer having a white or luminescent pigment and provides the opaque background for imparted image.	103. The method of claim 102, wherein an adhesive layer having an EAA polymer comprises a white background layer having a white or luminescent pigment and provides the opaque background for imparted image.
16. The method of claim 15, wherein a polymeric white layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.	60. The method of count 58, wherein a polymeric white layer of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.	104. The method of claim 102, wherein a polymeric white layer of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.
17. The method of claim 15, wherein the ink receptive coating of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.	61. The method of count 58, wherein the ink receptive coating of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.	105. The method of claim 102, wherein the ink receptive coating of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.
18. The method of claim 5, wherein overlaying the coated	62. The method of count 51, wherein overlaying the carrier	106. The method of claim 95, wherein overlaying the carrier

<p>substrate with one or more polymers includes overlaying the coated substrate with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>	<p>material with one or more polymers includes overlaying the carrier material with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>	<p>material with one or more polymers includes overlaying the carrier material with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>
<p>19. The method of claim 5, wherein overlaying the coated substrate with one or more polymers includes overlaying the coated substrate with a polymeric white layer and an EAA resin layer.</p>	<p>63. The method of count 51, wherein overlaying the carrier material with one or more polymers includes overlaying the carrier material with a polymeric white background layer and an adhesive layer having EAA resin.</p>	<p>107. The method of claim 95, wherein overlaying the carrier material with one or more polymers includes overlaying the carrier material with a polymeric white background layer and an adhesive layer having EAA resin.</p>
<p>20. The method of claim 6, further comprising providing an overlay parchment paper positionable over the ink jet printable layer and the resin, in lieu of the coated base, prior to the application of heat.</p>	<p>64. The method of count 52, further comprising providing a cover layer positionable over the ink-receiving layer and the adhesive layer having resin, in lieu of the carrier material, prior to the application of heat.</p>	<p>108. The method of claim 96, further comprising providing a cover layer positionable over the ink-receiving layer and the adhesive layer having resin, in lieu of the carrier material, prior to the application of heat.</p>
<p>21. The method of claim 6, wherein the ink jet printable layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>	<p>65. The method of count 52, wherein the ink-receiving layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>	<p>109. The method of claim 96, wherein the ink-receiving layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>
<p>22. The method of claim 7, wherein the ink receptive layer includes a melt temperature of about 20 degrees C to about 225 degrees C.</p>	<p>66. The method of count 53, wherein the ink receiving layer includes a melt temperature of about 20°C to about 225°C.</p>	<p>110. The method of claim 97, wherein the ink receiving layer includes a melt temperature of about 20°C to about 225°C.</p>
<p>23. The method of claim 7, wherein the polymer comprises a white layer and the resin layer includes EAA.</p>	<p>67. The method of count 53, wherein the polymer comprises a white background layer and the adhesive layer having resin includes EAA.</p>	<p>111. The method of claim 97, wherein the polymer comprises a white background layer and the adhesive layer having resin includes EAA.</p>

EXHIBIT 5

EXHIBIT 5

New Claims 45-58	Support in Present U.S Patent Application No. 09/980,466
<p>45. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material or paper:</p> <p>(b) providing a transfer print comprising:</p> <p style="padding-left: 40px;">(i) a carrier material;</p> <p style="padding-left: 40px;">(ii) an adhesive layer contacting the carrier material; and</p>	<p>45. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material or paper:</p> <p style="padding-left: 40px;">Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising:</p> <p style="padding-left: 40px;">Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p style="padding-left: 40px;">(i) a carrier material;</p> <p style="padding-left: 80px;">Page 5, line 24 defines a carrier material as a base layer.</p> <p style="padding-left: 80px;">Page 14, line 11 defines a carrier layer as baking paper.</p> <p style="padding-left: 80px;">Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p style="padding-left: 80px;">Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p style="padding-left: 80px;">Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p style="padding-left: 40px;">(ii) an adhesive layer contacting the carrier material; and</p> <p style="padding-left: 80px;">Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material.</p> <p style="padding-left: 80px;">Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p style="padding-left: 80px;">Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or</p>

completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an

<p>(iii) an ink-receiving layer that comprises a polymer that includes indicia</p>	<p>adhesion to the white back-ground layer.</p> <p>(iii) an ink-receiving layer that comprises a polymer that includes indicia</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink—receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This</p>
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<p>(iv) wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment;</p>	<p>has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(iv) wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are</p>
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usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white-also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink—jet transfer system according to one of the

<p>including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper</p> <p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>46. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is a textile.</p>	<p>image including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>46. Page 15, lines 28-29 discloses “...the graphic presentation to be applied onto the textile substrate”</p>
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<p>47. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is black.</p> <p>48. The method of claim 45 wherein the ink-receiving layer is situated on the white background layer containing one or more of titanium oxide or other white pigment or luminescent material.</p> <p>49. The method of claim 45 wherein the polymer of the ink-receiving layer is applied on the white background layer having titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the dark substrate.</p>	<p>47. See Title of present Application “Ink—jet transfer systems for dark textile substrates”</p> <p>48. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink—receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink—receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>49. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The</p>
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highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 10-19 discloses "In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a

<p>50. (a) A transfer print, comprising:</p> <p>(i) a dark substrate comprising woven, fabric based material or carrier material having paper;</p> <p>(ii) an adhesive layer overlaying the carrier material or dark substrate,</p>	<p>soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>50. (a) A transfer print comprising: Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a dark substrate comprising woven, fabric based material or carrier material having paper; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat—resistant separating paper, preferably silicon paper.”</p> <p>(ii) an adhesive layer overlaying the carrier material or dark substrate, Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material. Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p>
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Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 μm are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot—melt since said hot—melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material

<p>(iii) wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and</p>	<p>and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iii) wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white, also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p>
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(iv) an ink-receiving layer having polymer.	<p>Claim 8 discloses that the ink—jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>(iv) an ink-receiving layer having polymer.</p>
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Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.

Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”

Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically

<p>51. The transfer print of claim 50 wherein the ink-receiving layer is situated on the white background layer having titanium oxide or other white pigment.</p> <p>52. The transfer print of claim 50 wherein the ink-receiving layer comprises polypropylene.</p>	<p>bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>51. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>52. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC,</p>
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<p>53. The transfer print of claim 50 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>PVAC, ethylene-acrylate copolymers.”</p> <p>53. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p>
<p>54. A kit comprising the transfer print of claim 50 and a dark textile.</p>	<p>54. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate”</p>
<p>55. The kit of claim 54 wherein the dark textile is an article of clothing.</p>	<p>55. See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p>
<p>56. The kit of claim 55 wherein the article of clothing is a T-shirt.</p>	<p>56. Page 15, line 34 ...”the desired textile substrate, for instance a T-shirt,...”</p> <p>Page 15, line 34 ...”the desired textile</p>

<p>57. The transfer print of claim 50 wherein the ink-receiving layer is a polyamide.</p>	<p>substrate, for instance a T-shirt,...”</p> <p>57. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
<p>58. The transfer print of claim 50 wherein the ink-receiving layer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.</p>	<p>58. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a</p>

	<p>soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
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New Claims 59-90	Support in Present U.S. Patent Application No. 09/980,466
<p>59. (a) A method for making a transfer print, comprising:</p> <p>(b) providing an adhesive layer;</p> <p>(c) overlaying the adhesive layer with a polymer member, the polymer member comprising an ink-receiving layer effective for receiving imparted image; and</p>	<p>59. (a) A method for making a transfer print</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing an adhesive layer;</p> <p>Page 15, lines 5-7 discloses application of an adhesive layer, preferably a hot—melt layer, which comprises dispersed spherical polyester particles of a granular size of less than 30 pm.</p> <p>Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the on hand effects a good adhesion to the textile substrate....</p> <p>(c) overlaying the adhesive layer with a polymer member, the polymer member comprising an ink-receiving layer effective for receiving imparted image</p> <p>Page 8, lines 13-17 discloses in a very particularly preferred embodiment, the adhesive layer ...is a pure hot—melt layer. The hot—melt layer is essentially a wax—like polymer which is easily fusible and thus can for example be transferred onto the textile substrate together with the imprinted ink-receiving layer....</p> <p>Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the on hand effects a good adhesion to the textile substrate....</p> <p>Page 12, lines 10-15 discloses in a particularly preferred embodiment of the present invention, the ink-receiving layer</p>

<p>(d) combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image.</p>	<p>comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide.</p> <p>Page 16, lines 32-37, Page 17 lines 1-2 discloses “the ink-receiving layer was previously prepared as follows: an ethanol/water mixture in the ratio of 3:1 is placed in a vessel and a soluble polyamide binder is dissolved therein under heating to 45°C. After-wards the highly porous polyamide pigment “Orgasol 3501 EX D NAI” with a granular size of 10 um as well as an interior surface of about 25 m²/g pigment is dispersed in the solution.</p> <p>(d) combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image;</p> <p>Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer (hot-melt layer)</p> <p>Page 7, lines 7-10 discloses there occurs no repellant or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively,</p>
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<p>60. The method of claim 59 wherein the ink-receiving layer is effective for receiving ink jet imparted image.</p> <p>61. The method of claim 59 wherein the opaque background comprises a substantially white or luminescent background.</p>	<p>of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>60. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p> <p>61. Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing</p>
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	<p>a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p>
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<p>62. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material, or paper comprising:</p> <p>(b) providing a transfer print comprising</p> <p>(i)an adhesive layer,</p>	<p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>62. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material, or paper comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) an adhesive layer</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less</p>
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than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material

<p>(ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment;</p>	<p>and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer</p>
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comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer.

Page 7, lines 7-10 discloses there occurs no repellant or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.

Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.

Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier

	<p>material) coated with a hot-melt(adhesive layer)”</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a</p>
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destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued

	<p>1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink—jet printer (ink—jet—plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
63. The method of claim 62 wherein the dark substrate is a textile.	<p>63. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate”</p>
64. The method of claim 62 wherein the dark substrate is black.	<p>64. See Title of present Application “Ink—jet transfer systems for dark textile substrates”</p>
65. The method of claim 62 wherein the ink-receiving layer is impregnated with the white background layer having one or more of a titanium oxide or other white pigment or luminescent material.	<p>65. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink—receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink—receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As</p>

<p>66. The method of claim 62, wherein the polymer of the ink-receiving layer encapsulates substantially white background layer and receiving image, and transfers the substantially white background layer and the receiving image in a pattern that forms an image on the dark substrate.</p>	<p>binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>66. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink—receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the</p>
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<p>67. (a) An article for imparting an image to a substrate comprising:</p> <p>(b) an adhesive layer;</p>	<p>binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>67. (a) An article for imparting an image to a substrate comprising:</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9 - 37 and Page 17, Lines 1-13.</p> <p>(b)an adhesive layer;</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p>
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Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 μm .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 μm are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

<p>(c)one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment,</p>	<p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment,</p> <p>Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 5, lines 22-35 discloses The ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material, preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non—fusible pigments.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-</p>
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<p>(d) wherein the ink-receiving layer is effective for receiving the image; and wherein the white background layer provides an opaque background for received image.</p>	<p>copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>(d) wherein the ink-receiving layer is effective for receiving the image; and wherein the white background layer provides an opaque background for received image.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the</p>
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<p>68. The article of claim 67 wherein the ink-receiving layer comprises polypropylene.</p>	<p>binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>68. Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC,</p>
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<p>69. The article of claim 67 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>PVAC, ethylene-acrylate copolymers.”</p> <p>69. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p>
<p>70. The article of claim 67 wherein the substrate is an article of clothing.</p>	<p>70. Page 15, lines 28-29 discloses “...the graphic presentation to be applied onto the textile substrate”</p> <p>See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p> <p>Page 15, line 34 “...the desired textile substrate, for instance a T-shirt...”</p>
<p>71. The article of claim 67 wherein the polymer of the ink-receiving layer is a polyamide.</p>	<p>71. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present</p>

<p>72. The article of claim 67 wherein the polymer comprises LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>	<p>invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>72. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink—receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because</p>
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<p>73.(a) A method for making a transfer print, comprising:</p> <p>(b) providing a carrier material, contacting the carrier material with an adhesive layer;</p> <p>(c) contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink receptive polymer is effective for receiving an image and providing an opaque background for the image; and</p>	<p>of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>73. (a) A method for making a transfer print comprising: Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing a carrier material, contacting the carrier material with an adhesive layer; Page 16, lines 11-13 “In a first step, the hot-melt layer is applied onto a carrier material: Thereby a silicon paper...”(Note, the hot-melt layer is defined as the adhesive layer in Dalvey I, which has a similar specification to Dalvey II).</p> <p>(c) contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink receptive polymer is effective for receiving an image and providing an opaque background for the image Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)” Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer, which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p>
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(d) wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.

74. The method of claim 73 wherein the carrier material or the cover layer is effective for transferring heat from a heat source to the ink-receptive polymer when covering the ink-receptive polymer.

(d) wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.

Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

74. Page 15, lines 28-37, Page 16, lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper

<p>75. The method of claim 73 wherein, once contacted, at least a portion of the adhesive layer is peelable from the ink-receptive layer with the carrier material.</p>	<p>(baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>75. Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent</p>
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<p>76. The method of claim 73, further comprising applying an image including received image and the white background layer to the ink receptive polymer.</p>	<p>comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>76. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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<p>77. The method of claim 76, wherein the received image includes ink from an ink pen, an ink jet printer, or a laser printer.</p> <p>78. The article of claim 67, further comprising a dark substrate comprising textiles or paper based material for receiving the image including received image and the opaque background.</p> <p>79. The article of claim 67, further wherein the ink-receiving layer comprises an image.</p> <p>80. The method of claim 59, further comprising combining a portion of the adhesive layer with a white background layer having a titanium oxide or other white pigment.</p>	<p>77. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p> <p>78. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate” See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p> <p>79. Page 9, lines 20-22 generally disclose an ink-receiving layer that comprises a polymer that includes indicia.</p> <p>80. Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes. Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing</p>
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temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 µm containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background

<p>81. The method of claim 59, further comprising providing a carrier material underlaying the adhesive layer.</p> <p>82. The method of claim 81, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer member, or a cover layer is effective for covering the imparted image on the ink receiving layer and for transferring heat from a heat source to the polymer member.</p>	<p>layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>81. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer..</p> <p>82. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer</p>
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<p>83. (New) The method of claim 59, wherein overlaying the adhesive layer with a polymer member includes overlaying the adhesive layer with at least one ink-receiving layer configured to receive imparted image, and one or both of an EAA resin layer or a white background layer configured to provide the opaque background.</p>	<p>system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>83. Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are</p>
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not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.

Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion”.

Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 μm . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 μm .

Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 μm .

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 μm .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 μm are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

<p>84. (New) The method of claim 62, wherein providing the transfer print further comprises a carrier material.</p> <p>85. (New) The method of claim 84, further comprising peeling at least a portion of the adhesive layer and the carrier material away from the ink-receiving layer.</p>	<p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>84. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer..</p> <p>85. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer), which is preferably used in the ink-jet transfer system according to the present invention</p>
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<p>88. (New) The article of claim 67, further comprising a carrier material underlaying the adhesive layer.</p> <p>89. (New) The article of claim 88, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer and the ink-receptive layer, or a cover layer is effective for covering received image.</p> <p>90. (New) The method of claim 73, wherein the carrier material is peeled away from the ink-receptive polymer along a portion of the adhesive layer.</p>	<p>a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>88. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer.</p> <p>89. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>90. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper),</p>
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	<p>covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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New Claims 91-113	Support in Present U.S Patent
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	Application No. 09/980,466
91. (a) A method for transferring an image to a textile, comprising:	91.(a) A method for transferring an image to a textile, comprising: Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.
(b) obtaining a	(b) obtaining a
(i) transfer print comprising	(i) transfer print comprising Page 16, lines 10-37 and Page 17 lines 1-13 generally disclose a method for making a transfer print. Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.
(ii) an ink receiving layer;	(ii) an ink receiving layer; Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer

<p>(iii) an adhesive layer having an EAA resin,</p>	<p>comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(iii) an adhesive layer having an EAA resin,</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical</p>
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	<p>polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um.</p> <p>Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent</p>
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<p>(d) applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile;</p> <p>(e) applying one of the peeled carrier material or a cover layer over at least the ink-receiving layer and</p>	<p>the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>(d) applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>(e) applying one of the peeled carrier material or a cover layer over at least the</p>
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<p>the adhesive layer having EAA resin; and</p> <p>(f) applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.</p>	<p>ink-receiving layer and the adhesive layer having EAA resin; and</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>(f) applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p>
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<p>(c) an adhesive layer having an EAA resin or polymer having a melt point of about 20 degrees C. to about 300 degrees C. contacting the ink-receiving layer;</p>	<p>e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>(c) an adhesive layer having an EAA resin or polymer having a melt point of about 20 degrees C. to about 300 degrees C. contacting the ink-receiving layer;</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um.</p> <p>Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer</p>
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	<p>contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.</p> <p>Page 14, lines 17-24 discloses “The hot-melt layer preferably used as adhesive layer in contrast to the highly porous pigment, binder as well as the background layer, is essentially wax-like, i.e. it can be fused. Usually, hot-melts melt in a range of about 100-120°C while the highly porous pigments preferably melt in a range of 120-180°C, preferably 140-160°C. A usual hot-melt is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the background layer preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p>
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<p>(d) the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image received at least by the ink receiving layer; and</p>	<p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(d) the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image received at least by the ink receiving layer</p> <p>Page 5, lines 28-35 discloses a white background layer being applied on the adhesive layer and at least on ink-receiving layer being applied on the background layer. The white background layer, which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperature non-fusible (i.e. up to about 220° C) permanently elastic plastics, filled with white also non-fusible pigments.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt,</p>
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the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.

<p>93. (a) A method for enabling transfer of an image to a dark substrate or paper, the method comprising:</p> <p>(b) providing a transfer print comprising</p> <p>(i) a carrier material,</p> <p>(ii) and an ink-receiving layer comprising at least one polymer and an ink-receptive coating,</p>	<p>93. (a) A method for enabling transfer of an image to a dark substrate or paper, the method comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a carrier material</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) and an ink-receiving layer comprising at least one polymer and an ink-receptive coating</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic</p>
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<p>(c) wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer;</p>	<p>presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(c) wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer</p>
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Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”

Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling

<p>(d) wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate;</p>	<p>down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.</p> <p>(d) wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such</p>
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<p>(e) wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p>	<p>obtained is shining and matt.</p> <p>(e) wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a</p>
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<p>94. The method of claim 93, further comprising providing a cover layer positionable over the ink-receiving layer, in lieu of the carrier material, prior to the application of heat.</p> <p>95. (a) A method for making a transfer print, comprising:</p> <p>(b) obtaining a carrier material;</p> <p>(c) overlaying the carrier material with one or</p>	<p>background for dark prints.</p> <p>94. Page, 15, lines 28-36 and Page 16, lines 1-4 discloses “First, the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>95. (a) A method for making a transfer print, comprising:</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) obtaining a carrier material;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(c) overlaying the carrier material with one</p>
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<p>more polymers;</p> <p>(d) combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background;</p> <p>(e) overlaying the one or more polymers with an ink receiving layer;</p>	<p>or more polymers</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(d) combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>(e) overlaying the one or more polymers with an ink receiving layer;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity</p>
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<p>(f) wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising the image receivable by the ink-</p>	<p>ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(f) wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising</p>
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(g) for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.

Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink—jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

(g) for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.

Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and

	<p>afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p>
<p>96. (a) A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising:</p> <p>(b) providing a transfer print comprising</p>	<p>96. (a) A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p>

	<p>ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer</p>
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dispersion.

Page 16, lines 12-20 discloses "In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 μm . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 μm . Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 μm ."

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 μm .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 μm are dispersed. These spherical polyester particles in turn are more

<p>(c) wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer;</p>	<p>chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink—jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon</p>
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paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”

Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and removing the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated.

<p>(d) wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and</p> <p>(e) wherein heat is applicable to the carrier material, the ink-receiving layer, and the adhesive layer having resin so that the image is transferable to the dark substrate.</p>	<p>(d) wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(e) wherein heat is applicable to the carrier material, the ink-receiving layer, and the adhesive layer having resin so that the image is transferable to the dark substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is</p>
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<p>97. (a) A method for making a transfer print, comprising:</p> <p>(b) obtaining a carrier material;</p>	<p>smooth and faint.</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>97. (a) A method for making a transfer print, comprising:</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) obtaining a carrier material;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier</p>
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polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um. Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt,

<p>(e) combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and</p>	<p>also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(e) combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and</p> <p>Page 5, lines 28-31 discloses "...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer..."</p> <p>Page 16, lines 25-31 discloses "on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses "subsequently, a white background layer</p>
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(polyurethane foil) with a thickness of about 40um containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer

<p>(f) overlaying the carrier material having a polymer with the adhesive layer having resin;</p>	<p>are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>(f) overlaying the carrier material having a polymer with the adhesive layer having a resin;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the</p>
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<p>(g) wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having polymer.</p>	<p>present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>(g) wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having the polymer.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink—jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least</p>
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	<p>10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - "covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds."</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p>
98. (New) The method of claim 91, further comprising imparting image to the ink receiving layer using at least one of a copying or printing process.	98. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.
99. (New) The method of claim 98, wherein one or both of the ink receiving layer or the adhesive layer having EAA resin includes a white	99. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-

<p>background layer having titanium oxide or other white or luminescent pigment providing an opaque background for imparted image.</p>	<p>receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly</p>
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porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that

	<p>is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS,</p>
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<p>100. (New) The method of claim 99, wherein applying at least the non-peeled portions of the transfer print to the textile includes simultaneously applying an image comprising imparted image and the opaque background to the textile.</p> <p>101. (New) The method of claim 91, wherein the transfer print further comprises a white background layer disposed between the ink receiving layer and the adhesive layer having EAA resin or between the adhesive layer having EAA resin and the carrier material having silicone.</p>	<p>TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>100. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>101. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the</p>
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<p>102. (New) The method of claim 93, wherein the ink-receiving layer comprises a white background layer having a white or luminescent pigment that provides an opaque background for imparted image.</p> <p>103. (New) The method of claim 102, wherein an adhesive layer having an EAA polymer comprises a white background layer having a white or luminescent pigment and provides the opaque background for imparted image.</p> <p>104. (New) The method of claim 102, wherein a polymeric white layer of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.</p>	<p>ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 6, lines 31-35 discloses the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...</p> <p>102. Page 9, lines 20-23 discloses the ink—receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>103. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer — which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>104. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p>
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	<p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff</p>
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molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued

to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be

<p>105. (New) The method of claim 102, wherein the ink receptive coating of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.</p>	<p>blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>105. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40µm containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers,</p>
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nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

	<p>Page 7, lines 11-17 discloses that the "...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate".</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses "a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white</p>
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<p>106. (New) The method of claim 95, wherein overlaying the carrier material with one or more polymers includes overlaying the carrier material with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>	<p>background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>106. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 µm, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40µm containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white</p>
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<p>107. (New) The method of claim 95, wherein</p>	<p>background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>107. Page 8, line 37 and Page 9, lines 1-</p>
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<p>overlaying the carrier material with one or more polymers includes overlaying the carrier material with a polymeric white background layer and an adhesive layer having EAA resin.</p>	<p>2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability.</p>
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<p>108. (New) The method of claim 96, further comprising providing a cover layer positionable over the ink-receiving layer and the adhesive layer having resin, in lieu of the carrier material, prior to the application of heat.</p>	<p>Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>108. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon</p>
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<p>109. (New) The method of claim 96, wherein the ink-receiving layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>	<p>paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>109. Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer,</p>
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	<p>comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p>
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EXHIBIT 6

EXHIBIT 6

Dalvey I-Reissue U.S. Reissue Patent Application Serial No. 12/218,260 Claims 1-14	Support in Present U.S Patent Application No. 09/980,466
<p>1. (a) A method for transferring an image to a colored substrate comprising woven, fabric based material, or paper, comprising:</p> <p>(b) providing an image transfer sheet comprising</p> <p>(i) an image transfer substrate;</p> <p>(ii) a release layer contacting the image transfer substrate and</p>	<p>1. (a) A method for transferring an image to a colored substrate comprising woven, fabric based material, or paper, comprising: Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing an image transfer sheet comprising Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) an image transfer substrate; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) a release layer contacting the image transfer substrate and Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material. Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less</p>

than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material

<p>(iii) an image-imparting layer that comprises a polymer that includes indicia</p>	<p>and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iii) an image-imparting layer that comprises a polymer that includes indicia</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink—receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer,</p>
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<p>(iv) wherein the release layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment;</p>	<p>e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(iv) wherein the release layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected</p>
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from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white-also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

<p>(e) applying heat to at least the remaining portions of the image transfer sheet so that an image including indicia from the image-imparting layer is transferred from the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper</p>	<p>(e) applying heat to at least the remaining portions of the image transfer sheet so that an image including indicia from the image-imparting layer is transferred from the image transfer sheet to the colored substrate comprising woven, fabric based material, or paper</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p>
<p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>2. The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is a fabric.</p>	<p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>2. Page 15, lines 28-29 discloses “...the graphic presentation to be applied onto the textile substrate”</p>

<p>3. The method of claim 1 wherein the colored substrate comprising woven, fabric based material, or paper is black.</p> <p>4. The method of claim 1 wherein the image imparting layer is impregnated with one or more of titanium oxide or other white pigment or luminescent material.</p> <p>5. The method of claim 1 wherein the polymer of the image-imparting layer encapsulates the titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the colored substrate.</p>	<p>3. See Title of present Application “Ink—jet transfer systems for dark textile substrates”</p> <p>4. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink—receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink—receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>5. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity</p>
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ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 10-19 discloses "In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for

<p>6. (a) An image transfer sheet, comprising:</p> <p>(i) a colored substrate comprising woven, fabric based material, or paper;</p> <p>(ii) a release layer overlaying the substrate,</p>	<p>example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>6. (a) An image transfer sheet, comprising: Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a colored substrate comprising woven, fabric based material, or paper; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat—resistant separating paper, preferably silicon paper.”</p> <p>(ii) a release layer overlaying the substrate, Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material. Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um. Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is</p>
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<p>(iii) wherein the release layer is impregnated with titanium oxide or other white</p>	<p>essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot—melt since said hot—melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iii) wherein the release layer is impregnated with titanium oxide or other</p>
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<p>pigment or luminescent pigment;</p>	<p>white pigment or luminescent pigment;</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white, also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink—jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p>
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<p>(iv) and a polymer layer.</p>	<p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>(iv) and a polymer layer.</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10</p>
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	<p>lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form</p>
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<p>7. The image transfer sheet of claim 6 wherein the polymer layer is comprised of titanium oxide or other white pigment.</p>	<p>covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>7. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p>
<p>8. The image transfer sheet of claim 6 wherein the polymer layer comprises polypropylene.</p>	<p>8. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p>
<p>9. The image transfer sheet of claim 6 wherein the polymer layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>9. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-</p>

	<p>copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p>
10. A kit comprising the image transfer sheet of claim 6 and a colored fabric.	<p>10. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate”</p>
11. The kit of claim 10 wherein the colored fabric is an article of clothing.	<p>11. See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p>
12. The kit of claim 11 wherein the article of clothing is a T-shirt.	<p>12. Page 15, line 34 ...”the desired textile substrate, for instance a T-shirt,...” Page 15, line 34 ...”the desired textile substrate, for instance a T-shirt,...”</p>
13. The image transfer sheet of claim 6 wherein the polymer layer is a polyamide.	<p>13. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-</p>

<p>14. The image transfer sheet of claim 6 wherein the polymer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.</p>	<p>butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>14. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
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Dalvey II U.S. Patent Application No. 10/911,429 Claims 17, 19-26, 28-39, and 47-57	Support in Application No. 09/980,466
<p>17. (a) A method for making an image transfer sheet, comprising:</p> <p>(b) providing a release layer;</p> <p>(c) overlaying the release layer with a polymer member, the polymer member comprising an ink receptive polymer portion effective for receiving imparted indicia; and</p>	<p>17. (a) A method for making an image transfer sheet, comprising:</p> <p style="padding-left: 40px;">Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing a release layer;</p> <p style="padding-left: 40px;">Page 15, lines 5-7 discloses application of an adhesive layer, preferably a hot—melt layer, which comprises dispersed spherical polyester particles of a granular size of less than 30 pm.</p> <p style="padding-left: 40px;">Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the on hand effects a good adhesion to the textile substrate....</p> <p>(c) overlaying the release layer with a polymer member, the polymer member comprising an ink receptive polymer portion effective for receiving imparted indicia; and</p> <p style="padding-left: 40px;">Page 8, lines 13-17 discloses in a very particularly preferred embodiment, the adhesive layer ...is a pure hot—melt layer. The hot—melt layer is essentially a wax—like polymer which is easily fusible and thus can for example be transferred onto the textile substrate together with the imprinted ink-receiving layer....</p> <p style="padding-left: 40px;">Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the</p>

<p>(d) combining a portion of the polymer member with a titanium oxide or other white pigment, thereby providing an opaque background for the imparted indicia.</p>	<p>on hand effects a good adhesion to the textile substrate....</p> <p>Page 12, lines 10-15 discloses in a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide.</p> <p>Page 16, lines 32-37, Page 17 lines 1-2 discloses “the ink-receiving layer was previously prepared as follows: an ethanol/water mixture in the ratio of 3:1 is placed in a vessel and a soluble polyamide binder is dissolved therein under heating to 45°C. After-wards the highly porous polyamide pigment “Orgasol 3501 EX D NAIL” with a granular size of 10 um as well as an interior surface of about 25 m²/g pigment is dispersed in the solution.</p> <p>(d) combining a portion of the polymer member with a titanium oxide or other white pigment, thereby providing an opaque background for the imparted indicia.</p> <p>Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer (hot-melt layer)</p> <p>Page 7, lines 7-10 discloses there occurs no repellant or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p>
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	<p>Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p>
19. The method of claim 17, wherein the ink receptive portion is effective for receiving ink jet imparted indicia.	<p>19. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p>
20. The method of claim 17, wherein the opaque background comprises a substantially white or luminescent background.	<p>20. Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible</p>

(i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the

	<p>group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p>
<p>21. (a) A method for transferring an image to a colored or black substrate, comprising:</p> <p>(b) providing an image transfer sheet comprising</p>	<p>62. (a) A method for transferring an image to a colored or black substrate, comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing an image transfer sheet comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) an adhesive layer</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the</p>

carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 μm .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 μm are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a

<p>(ii) a release layer, and an image-imparting portion that comprises a polymer configured to receive indicia, wherein one or more of the image-imparting portion and the release layer comprise a titanium oxide or other white pigment or luminescent pigment;</p>	<p>convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(ii) a release layer, and an image-imparting portion that comprises a polymer configured to receive indicia, wherein one or more of the image-imparting portion and the release layer comprise a titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers,</p>
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nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer.

Page 7, lines 7-10 discloses there occurs no repellant or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.

Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-

	<p>receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the</p>
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filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no

<p>(c) contacting one or more portions of the image transfer sheet to the colored or black substrate; and</p>	<p>splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>(c) contacting one or more portions of the image transfer sheet to the colored or black substrate; and</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p>
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22. The method of claim 21, wherein the colored or black substrate is a fabric.

24. The method of claim 21, wherein the image-imparting portion is impregnated with one or more of a titanium oxide or other white pigment or luminescent material.

Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink—jet printer (ink—jet—plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

23. See Title of present Application
“Ink—jet transfer systems for dark textile
substrates”

Page 9, lines 20-21 discloses “the

<p>25. The method of claim 24, wherein the polymer of the image imparting portion encapsulates the substantially white or luminescent background and received indicia, and transfers the substantially white or luminescent background and received indicia in a pattern that forms an image on the colored or black substrate.</p>	<p>ink—receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>25. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are</p>
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<p>26. (a) An article for imparting an image to a substrate comprising:</p>	<p>suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink—receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>26. (a) An article for imparting an image to a substrate comprising:</p> <p>Page 17, Line 25 provides a transfer</p>
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<p>(b) a release layer; and</p>	<p>print which has been obtained generally according to Example 1, Page 16, Lines 9 - 37 and Page 17, Lines 1-13.</p> <p>(b) a release layer; and</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance ,respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the</p>
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<p>(c) one or more layers overlaying the release layer, comprising an ink receptive portion and a polymer that includes a titanium oxide or other white pigment;</p>	<p>realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) one or more layers overlaying the release layer, comprising an ink receptive portion and a polymer that includes a titanium oxide or other white pigment;</p> <p>Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 5, lines 22-35 discloses The ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material, preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic</p>
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<p>(d) wherein the ink receptive portion is effective for receiving indicia, and wherein the titanium oxide of other white pigment provides an opaque background for received indicia.</p>	<p>plastics, filled with white also (up to about 220°C) non—fusible pigments.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>(d) wherein the ink receptive portion is effective for receiving indicia, and wherein the titanium oxide of other white pigment provides an opaque background for received indicia.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene</p>
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<p>28. The article of claim 26, wherein the ink receptive portion comprises polypropylene.</p>	<p>copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>28. Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous</p>
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<p>29. The article of claim 26, wherein the ink receptive portion comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>29. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p>
<p>30. The article of claim 26, wherein the substrate is an article of clothing.</p>	<p>30. Page 15, lines 28-29 discloses “...the graphic presentation to be applied onto the textile substrate”</p> <p>See Title of present Application “Ink-jet transfer systems for dark textile</p>

<p>31. The article of claim 26, wherein the ink receptive polymer is a polyamide.</p>	<p>substrates”</p> <p>Page 15, line 34 “...the desired textile substrate, for instance a T-shirt...”</p> <p>31. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
<p>32. The article of claim 26, wherein the polymer LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>	<p>32. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink—receiving layer</p>

<p>33. (a) A method for making an image transfer sheet, comprising:</p> <p>(b) providing a base layer; contacting the base layer with a release layer; and</p> <p>(c) contacting the release layer with an ink: receptive polymer that includes a titanium oxide or other white pigment, wherein the ink receptive polymer is effective for receiving indicia and providing an opaque background for the indicia;</p>	<p>comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>73. (a) A method for making an image transfer sheet, comprising: Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing a base layer; contacting the base layer with a release layer; and Page 16, lines 11-13 “In a first step, the hot-melt layer is applied onto a carrier material: Thereby a silicon paper...”(Note, the hot-melt layer is defined as the adhesive layer in Dalvey I, which has a similar specification to Dalvey II).</p> <p>(c) contacting the release layer with an ink: receptive polymer that includes a titanium oxide or other white pigment, wherein the ink receptive polymer is effective for receiving indicia and providing an opaque background for the indicia; Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)” Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer, which is preferably used in the ink-jet transfer system according to the present invention</p>
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<p>(d) wherein the base layer, when peeled away from the ink receptive polymer, or an overlay release paper is effective for covering indicia received by the ink receptive polymer prior to an application of heat.</p> <p>34. The method of claim 33, wherein the base layer or the overlay release paper is effective for transferring heat from a heat source to the ink receptive polymer when covering the ink receptive polymer.</p>	<p>as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(d) wherein the base layer, when peeled away from the ink receptive polymer, or an overlay release paper is effective for covering indicia received by the ink receptive polymer prior to an application of heat.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>34. Page 15, lines 28-37, Page 16, lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-</p>
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<p>35. The method of claim 33, wherein, once contacted, at least a portion of the release layer is peelable away from the ink receptive polymer with the base layer.</p>	<p>shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>35. Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax</p>
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<p>36. The method of claim 33, further comprising applying an image including received indicia and the opaque background to the ink receptive polymer.</p>	<p>components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>36. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded</p>
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<p>37. The method of claim 36, wherein the received indicia includes ink from an ink pen, an ink jet printer, or a laser printer.</p> <p>38. The article of claim 26, further comprising a colored or black substrate comprising woven, fabric, or paper based material, or paper for receiving an image including received indicia and the opaque background.</p> <p>39. The article of claim 26, wherein the ink receptive portion comprises indicia.</p> <p>47. The method of claim 17, further comprising combining a portion of the release layer with a titanium oxide or other white pigment.</p>	<p>before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>37. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p> <p>38. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate” See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p> <p>39. Page 9, lines 20-22 generally disclose an ink-receiving layer that comprises a polymer that includes indicia.</p> <p>47. Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes. Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected</p>
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from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 µm containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

<p>48. The method of claim 17, further comprising providing a base layer underlying the release layer.</p> <p>49. The method of claim 48, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer member, or an overlay release paper is effective for covering the imparted indicia on the ink receptive portion and for transferring heat from a heat source to the polymer member.</p>	<p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>48. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 µm, a white background layer being applied on the adhesive layer..</p> <p>49. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is</p>
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<p>50. The method of claim 17, wherein overlaying the release layer with a polymer member includes overlaying the release layer with at least one ink-receiving layer configured to receive imparted indici, and one or both of an EAA resin layer or a white layer configured to provide the opaque background.</p>	<p>smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>50. Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff</p>
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molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.

Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion”.

Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 μm . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 μm .

Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 μm .

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and

<p>51. The method of claim 21, wherein providing the image transfer sheet further comprises providing a base layer.</p> <p>52. The method of claim 51, further comprising peeling at least a portion of the release layer and the base layer away from the image-imparting portion.</p>	<p>to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>51. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer..</p> <p>52. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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<p>53. The method of claim 52, further comprising positioning the peeled release layer portion and the base layer, or a parchment release paper, over the image-imparting portion.</p> <p>54. The method of claim 53, wherein applying heat to the one or more portions of the image transfer sheet includes applying heat to one of the peeled release layer portion and the base layer or the parchment release paper, and the image-imparting portion.</p>	<p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer), which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>53. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>54. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least</p>
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<p>55. The article of claim 26, further comprising a base layer underlaying the release layer.</p> <p>56. The article of claim 55, wherein the base layer and at least a portion of the release layer, when peeled away from the polymer and the ink receptive portion, or an overlay release paper is effective for covering received indicia.</p> <p>57. The method of claim 33, wherein the base layer is peeled away from the ink receptive polymer along a portion of the release layer.</p>	<p>10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>55. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer.</p> <p>56. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>57. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet</p>
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	<p>transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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Dalvey III U.S. Patent Application No. 12/034,932 Claims 1-11 and 14-23	Support in Application No. 09/980,466
<p>1. (a) A method for transferring an image to a fabric, comprising:</p> <p>(b) obtaining an</p> <p>(i) image transfer sheet, comprising</p> <p>(ii) an ink receptive portion,</p>	<p>1. (a) A method for transferring an image to a fabric, comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) obtaining an</p> <p>(i) image transfer sheet, comprising Page 16, lines 10-37 and Page 17 lines 1-13 generally disclose a method for making a transfer print. Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(ii) an ink receptive portion, Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC,</p>

<p>(iii) an EAA resin,</p>	<p>ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(iii) an EAA resin,</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene</p>
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acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um.

Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.

Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a

<p>(iv) a silicone release coating and a base portion;</p> <p>(c) peeling the silicone release coating and the base portion from the EAA resin and the ink receptive portion;</p>	<p>solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iv) a silicone release coating and a base portion;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(c) peeling the silicone release coating and the base portion from the EAA resin and the ink receptive portion;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile</p>
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<p>(d) applying at least the non-peeled portions of the image transfer sheet to the fabric so that the EAA resin contacts the fabric;</p>	<p>substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>(d) applying at least the non-peeled portions of the image transfer sheet to the fabric so that the EAA resin contacts the fabric;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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<p>(e) applying one of the peeled silicone release coating and the base portion or an overlay release paper over at least the ink receptive portion and the EAA resin; and</p> <p>(f) applying heat to one of the peeled silicone release coating and the base portion or the overlay release paper, the ink receptive portion, the EAA resin and the fabric.</p>	<p>(e) applying one of the peeled silicone release coating and the base portion or an overlay release paper over at least the ink receptive portion and the EAA resin; and</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>(f) applying heat to one of the peeled silicone release coating and the base portion or the overlay release paper, the ink receptive portion, the EAA resin and the fabric.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling</p>
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<p>2. (a) An image transfer sheet, comprising:</p> <p>(b) an ink receptive portion;</p>	<p>down.</p> <p>2. (a) An image transfer sheet, comprising: Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(b) an ink receptive portion; Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer. Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.” Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly</p>
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<p>(c) an EAA resin or polymer having a melt point of about 20 degrees C to about 300 degrees C contacting the ink receptive portion,</p>	<p>porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>(c) an EAA resin or polymer having a melt point of about 20 degrees C to about 300 degrees C contacting the ink receptive portion,</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um.</p> <p>Original Claim 11 discloses ”the</p>
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ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.

Page 14, lines 17-24 discloses “The hot-melt layer preferably used as adhesive layer in contrast to the highly porous pigment, binder as well as the background layer, is essentially wax-like, i.e. it can be fused. Usually, hot-melts melt in a range of about 100-120°C while the highly porous pigments preferably melt in a range of 120-180°C, preferably 140-160°C. A usual hot-melt is for instance an ethylene acrylic acid copolymer dispersion.

Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the background layer preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they

<p>(d) the EAA resin or polymer including one or more pigments providing an opaque background for indicia received at least by the ink receptive portion;</p>	<p>can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(d) the EAA resin or polymer including one or more pigments providing an opaque background for indicia received at least by the ink receptive portion;</p> <p>Page 5, lines 28-35 discloses a white background layer being applied on the adhesive layer and at least on ink-receiving layer being applied on the background layer. The white background layer, which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperature non-fusible (i.e. up to about 220° C) permanently elastic plastics, filled with white also non-fusible pigments.</p> <p>Page 9, lines 6-19 discloses an</p>
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	<p>adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p>
(e) a silicone release portion; a base paper portion;	<p>(e) a silicone release portion; a base paper portion;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p>
(f) wherein the silicone release portion and the base paper portion are separable from the ink receptive portion and the EAA resin or polymer.	<p>(f) wherein the silicone release portion and the base paper portion are separable from the ink receptive portion and the EAA resin or polymer.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic</p>

presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.

<p>3. (a) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, the method comprising:</p> <p>(b) providing an image transfer sheet comprising</p> <p>(i) a coated image transfer substrate base and</p> <p>(ii) an image imparting portion, the image imparting portion comprising at least one polymer and an ink receptive coating,</p>	<p>3. (a) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, the method comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing an image transfer sheet comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a coated image transfer substrate base and</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) an image imparting portion, the image imparting portion comprising at least one polymer and an ink receptive coating,</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The</p>
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highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

<p>(c) wherein the coated image transfer substrate base is contactable to a surface of the image imparting portion; wherein the coated image transfer substrate base is peelable from the image imparting portion and positionable over the image imparting portion;</p>	<p>(c) wherein the coated image transfer substrate base is contactable to a surface of the image imparting portion; wherein the coated image transfer substrate base is peelable from the image imparting portion and positionable over the image imparting portion;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is</p>
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<p>(d) wherein the image imparting portion is contactable to the colored or black substrate such that imparted indicia face away from the colored or black substrate;</p>	<p>directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.</p> <p>(d) wherein the image imparting portion is contactable to the colored or black substrate such that imparted indicia face away from the colored or black substrate;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of</p>
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<p>(e) and wherein heat is applicable to the coated image transfer substrate base and the image imparting portion so that imparted indicia is transferable to the colored or black substrate.</p>	<p>the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(e) and wherein heat is applicable to the coated image transfer substrate base and the image imparting portion so that imparted indicia is transferable to the colored or black substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein,</p>
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<p>4. The method of claim 3, further comprising providing an overlay parchment paper positionable over the image imparting portion, in lieu of the coated image transfer substrate base, prior to the application of heat.</p> <p>5. (a) A method for making an image transfer sheet, comprising:</p> <p>(b) obtaining a coated substrate;</p>	<p>respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>4. Page, 15, lines 28-36 and Page 16, lines 1-4 discloses “First, the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>5. (a) A method for making an image transfer sheet, comprising: Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) obtaining a coated substrate; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the</p>
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<p>(c) overlaying the coated substrate with one or more polymers;</p> <p>(d) combining at least one of the one or more polymers with a titanium oxide or other white or luminescent pigment, thereby forming an opaque background; and</p> <p>(e) overlaying the one or more polymers with an ink receptive layer;</p>	<p>carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(c) overlaying the coated substrate with one or more polymers;</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(d) combining at least one of the one or more polymers with a titanium oxide or other white or luminescent pigment, thereby forming an opaque background; and</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>(e) overlaying the one or more polymers with an ink receptive layer;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving</p>
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layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13,

<p>6. (a) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, the method comprising:</p>	<p>1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>6. (a) A method for enabling transfer of an image to a colored or black substrate comprising woven, fabric, or paper based material, the method comprising:</p> <p>Page 17, Lines 15-32 generally</p>
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<p>(b) providing an image transfer sheet comprising a</p> <p>(i) coated base,</p> <p>(ii) a resin and an ink jet printable layer configured to receive indicia, wherein the coated base is contactable to the resin;</p>	<p>describes a method for transferring an image to a T-shirt.</p> <p>(b) providing an image transfer sheet comprising a</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) coated base,</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) a resin and an ink jet printable layer configured to receive indicia, wherein the coated base is contactable to the resin;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving</p>
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layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 8, line 37 and Page 9, lines 1-

	<p>2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 μm. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 μm. Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 μm.</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 μm.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the</p>
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<p>(c) wherein the coated base is peelable from the resin and the ink jet printable layer and positionable over the resin and the ink jet printable layer;</p>	<p>hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink—jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) wherein the coated base is peelable from the resin and the ink jet printable layer and positionable over the resin and the ink jet printable layer;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic</p>
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presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”

Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and removing the carrier layer (baking paper). During the iron pressing,

<p>(d) wherein the resin is contactable to the colored or black substrate, such that received indicia face away from the colored or black substrate; and</p> <p>(e) wherein heat is applicable to the coated base, the ink jet printable layer, and the resin so that the image is transferable to the colored or black substrate.</p>	<p>the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated.</p> <p>(d) wherein the resin is contactable to the colored or black substrate, such that received indicia face away from the colored or black substrate; and</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(e) wherein heat is applicable to the coated base, the ink jet printable layer, and the resin so that the image is transferable to the colored or black substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded</p>
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	<p>before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p>
7. (a) A method for making an image transfer sheet, comprising:	<p>97. (a) A method for making an image transfer sheet, comprising:</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p>
(b) obtaining a coated substrate;	<p>(b) obtaining a coated substrate;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier</p>

a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um. Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they

<p>(e) combining at least one of the polymer or the resin layer with a titanium oxide or other white pigment, thereby forming an opaque background; and</p>	<p>can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(e) combining at least one of the polymer or the resin layer with a titanium oxide or other white pigment, thereby forming an opaque background; and</p> <p>Page 5, lines 28-31 discloses "...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer..."</p> <p>Page 16, lines 25-31 discloses "on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p>
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	<p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the</p>
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<p>(f) overlaying the polymer and the resin layer with an ink receptive layer;</p>	<p>claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>(f) overlaying the polymer and the resin layer with an ink receptive layer;</p> <p>Page 5, lines 22-31 discloses “the</p>
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<p>(g) wherein coated substrate, when peeled from the polymer, the resin layer and the ink receptive layer, or a release paper is effective for covering an image comprising indicia receivable by the ink receptive layer and the opaque background and for transferring heat from a heat source to at least the ink receptive layer, the resin, and the polymer.</p>	<p>ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>(g) wherein coated substrate, when peeled from the polymer, the resin layer and the ink receptive layer, or a release paper is effective for covering an image comprising indicia receivable by the ink receptive layer and the opaque background and for transferring heat from a heat source to at least the ink receptive layer, the resin, and the polymer.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink—jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least</p>
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	<p>10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - "covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds."</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p>
8. The method of claim 1, further comprising imparting indicia to the ink receptive portion using at least one of a copying or printing process.	<p>8. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p>
9. The method of claim 8, wherein one or both of the ink receptive portion or the EAA resin includes a titanium oxide or other white or luminescent	<p>9. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-</p>

<p>pigment providing an opaque background for imparted indicia.</p>	<p>receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly</p>
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porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that

is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS,

<p>10. The method of claim 9, wherein applying at least the non-peeled portions of the image transfer sheet to the fabric includes simultaneously applying an image comprising imparted indicia and the opaque background to the fabric.</p> <p>11. The method of claim 1, wherein the image transfer sheet further comprises a white layer disposed between the ink receptive portion and the EAA resin or between the EAA resin and the silicone release coating.</p>	<p>TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>10. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>11. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the</p>
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<p>14. The method of claim 3, wherein the image imparting portion comprises a white or luminescent pigment that provides an opaque background for imparted indicia.</p> <p>15. The method of claim 15, wherein an EAA polymer layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.</p> <p>16. The method of claim 15, wherein a polymeric white layer of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.</p>	<p>ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 6, lines 31-35 discloses the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...</p> <p>14. Page 9, lines 20-23 discloses the ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>15. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer — which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>16. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p>
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	<p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff</p>
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molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued

to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be

<p>17. The method of claim 15, wherein the ink receptive coating of the image imparting portion comprises the white or luminescent pigment and provides the opaque background for imparted indicia.</p>	<p>blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>17. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers,</p>
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nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

	<p>Page 7, lines 11-17 discloses that the "...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate".</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses "a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO₂ is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white</p>
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<p>18. The method of claim 5, wherein overlaying the coated substrate with one or more polymers includes overlaying the coated substrate with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>	<p>background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO₄, ZnS, TiO₂, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>18. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 µm, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40µm containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white</p>
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<p>19. The method of claim 5, wherein overlaying the</p>	<p>background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>19. Page 8, line 37 and Page 9, lines 1-</p>
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<p>coated substrate with one or more polymers includes overlaying the coated substrate with a polymeric white layer and an EAA resin layer.</p>	<p>2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability.</p>
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<p>20. The method of claim 6, further comprising providing an overlay parchment paper positionable over the ink jet printable layer and the resin, in lieu of the coated base, prior to the application of heat.</p>	<p>Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>20. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon</p>
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<p>21. The method of claim 6, wherein the ink jet printable layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>	<p>paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>21. Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer,</p>
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	<p>e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p>
<p>22. The method of claim 7, wherein the ink receptive layer includes a melt temperature of about 20 degrees C to about 225 degrees C.</p>	<p>22. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
<p>23. The method of claim 7, wherein the polymer comprises a white layer and the resin layer includes EAA.</p>	<p>23. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which</p>

	<p>comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO₂ (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% TiO₂ is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p>
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